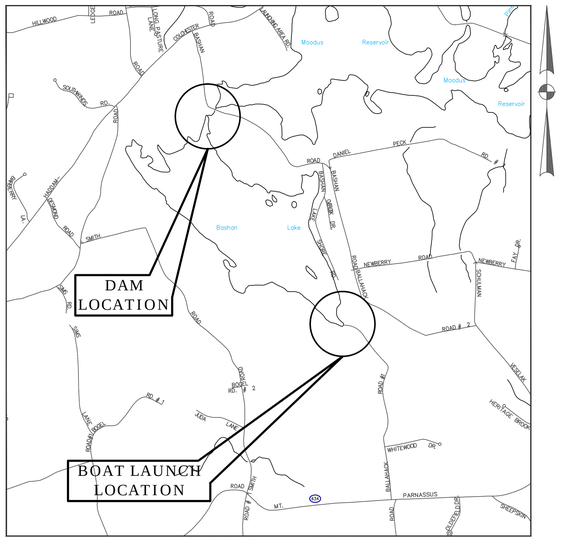


LOCATION MAP
SCALE: 1" = 2000'

IMPROVEMENTS TO BASHAN LAKE DAM

EAST HADDAM, CONNECTICUT

DEEP DAM NO. 4113

PROJECT NO. WR-DR-4113-2014-03

MARCH 2014

STATE OF CONNECTICUT
DANNEL P. MALLOY, GOVERNOR

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

INLAND WATER RESOURCES DIVISION

GENERAL NOTES

1) SPECIFICATIONS: AS PROVIDED FOR IN THE CONTRACT DOCUMENTS AND SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 816 (2004), AND ALL SUPPLEMENTAL SPECIFICATIONS THERETO. AS WELL AS SPECIAL PROVISIONS PROVIDED IN CONTRACT DOCUMENTS.

2) ALLOWABLE DESIGN STRESS:
CLASS "F" CONC. - BASED ON f'c = 4000 PSI
REINFORCEMENT (ASTM A615 GRADE 60) - fs = 24,000 PSI

3) EXPOSED EDGES: ALL EXPOSED EDGES OF CONCRETE SHALL BE BEVELED 1"x1" UNLESS OTHERWISE DIMENSIONED.

4) DAMPPROOFING: DAMPPROOFING SHALL BE PROVIDED ON ALL UNEXPOSED VERTICAL CONCRETE FACES.

5) NO EXCEPTION WILL BE TAKEN TO THESE PLANS WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER AND ENGINEER. IN THE EVENT THAT THE CONTRACTOR, ITS SUBCONTRACTORS, MATERIAL SUPPLIERS, OR FABRICATORS PROPOSE A DESIGN MODIFICATION, SUCH A PROPOSAL MUST BE APPROVED BY THE ENGINEER AND THE OWNER AND SHALL BE STAMPED AND CERTIFIED BY A PROFESSIONAL ENGINEER, WITH EXPERTISE IN THE FIELD OF THE MODIFICATION, LICENSED TO PRACTICE IN THE STATE OF CONNECTICUT.

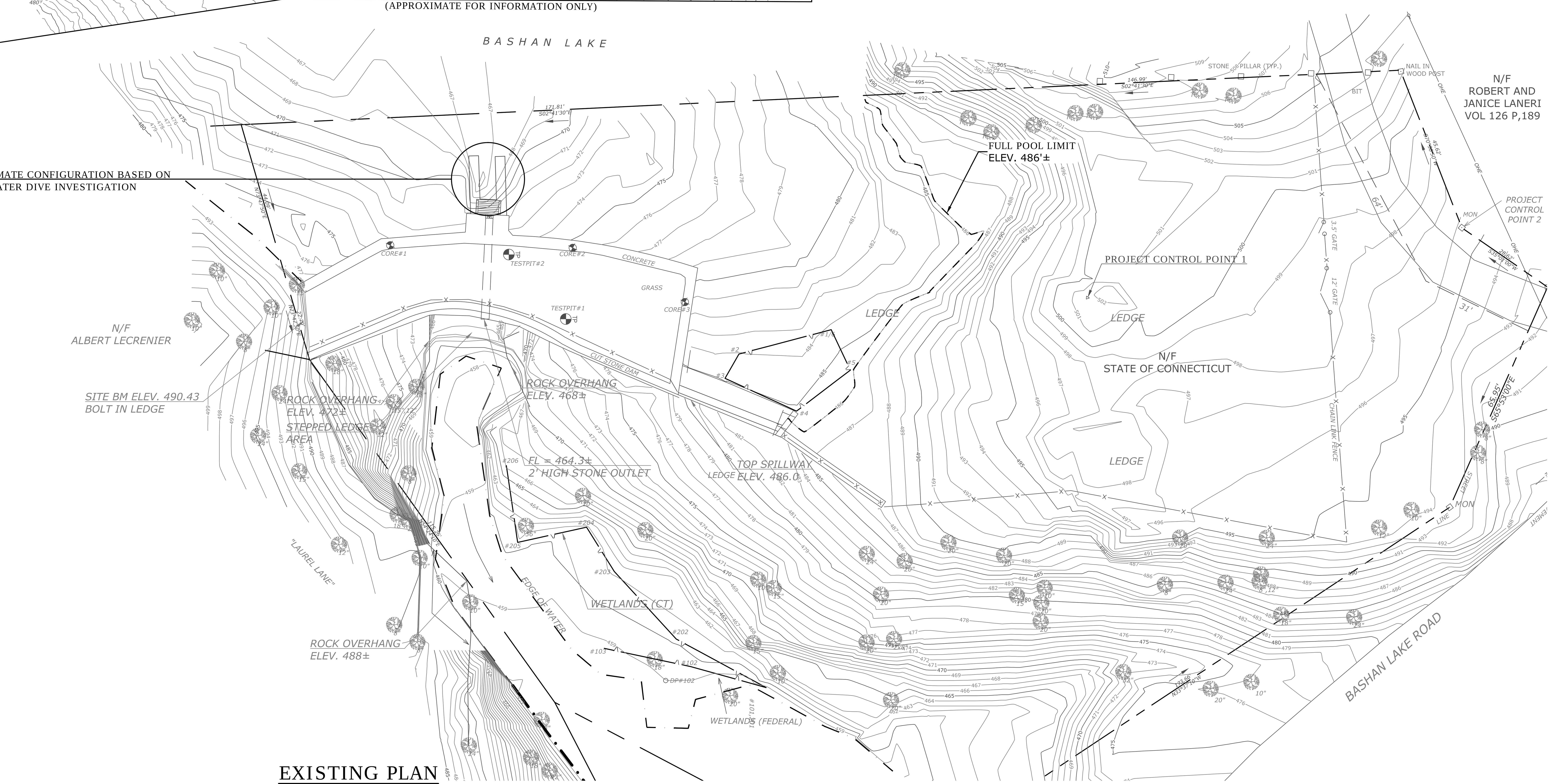
6) PAY ITEMS: TECHNICAL SPECIFICATIONS WILL BE ACCORDING TO STATE OF CONNECTICUT FORM 816 (SEE NOTE 1). SOME OF THESE TECHNICAL ITEMS HAVE BEEN COMBINED FOR PAYMENT PURPOSES AND THEREFORE PAYMENT WILL ONLY BE MADE ACCORDING TO THE PAY ITEMS LISTED IN THE BID DOCUMENT FORMS PROVIDED. ALL MATERIAL, TOOLS, EQUIPMENT, AND LABOR REQUIRED TO COMPLETE THE WORK CALLED FOR ON THESE PLANS SHALL BE INCLUDED IN THESE PAY ITEMS. IF NOT SPECIFICALLY CALLED OUT AS A SEPARATE PAY ITEM, THEN MATERIAL, TOOLS, EQUIPMENT, OR LABOR SHALL BE ASSUMED TO BE INCLUDED IN THE GENERAL COST OF THE WORK.

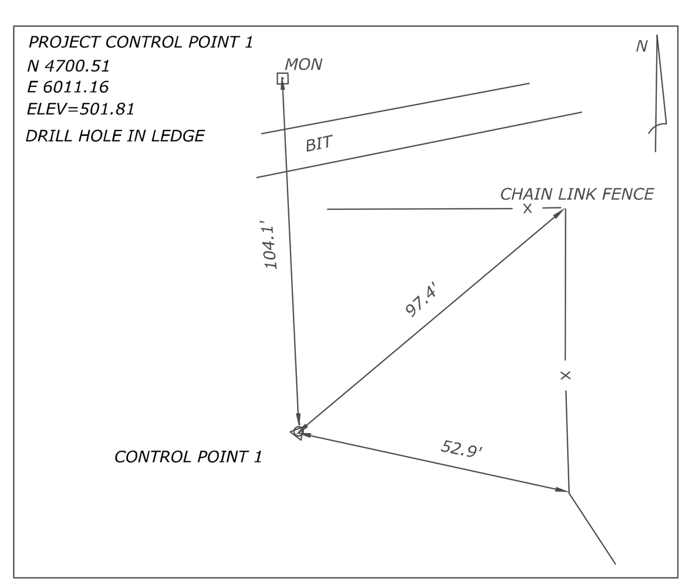
FINAL DESIGN

STATE OF CONNECTICUT
JAY A. COSTELLO
13202
LICENSED
PROFESSIONAL ENGINEER

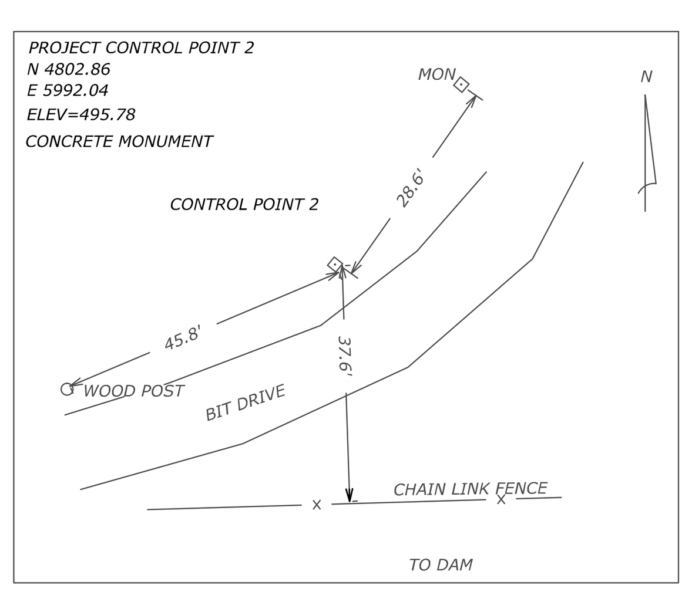
Jay A. Costello
2014.08.04
18:40:14-04'00'

LIST OF DRAWINGS





ASSUMED HORIZONTAL AND VERTICAL DATUM



ASSUMED HORIZONTAL AND VERTICAL DATUM

CONTROL POINTS

SCALE: NOT TO SCALE

MAP REFERENCES:

"PLAN MADE FOR STATE OF CONNECTICUT DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SHOWING DAM SITE AT BASHAN LAKE IN THE TOWN OF EAST HADDAM
SCALE 1"=20'" 5-25-1967 CHANDLER AND PALMER SHEET 2 OF 2

"IMPROVEMENTS AND REPAIRS BASHAN LAKE DAM, EAST HADDAM CONN. LENARD ENGINEERING INC., STORRS, CT" AUG 1982 1"=20'

FIELD SURVEY PERFORMED APRIL AND MAY 2012, WILLIAM B. HEARN, L.S.

NOTES:

WETLANDS FLAGGED BY SOIL SCIENCE SERVICES OF CHESHIRE, CT ON MARCH 30 2012 AND FIELD LOCATED BY WILLIAM HEARN, L.S.

ASSUMED HORIZONTAL AND VERTICAL DATUM.

UNDERWATER SURVEY BY OCEAN SURVEYS, INC. OLD SAYBROOK, CT, 9/5/2012

EXISTING PLAN

SCALE: 1" = 20'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY DEEP AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION

REVISIONS

SUPV.	J.A.C.
DESIGN	K.K.
DRAWN	M.D.C.
CHECKED	S.T.A.
DATE	03/26/14

FINAL DESIGN

WMC CONSULTING ENGINEERS
• WENGELL, McDONNELL & COSTELLO •
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

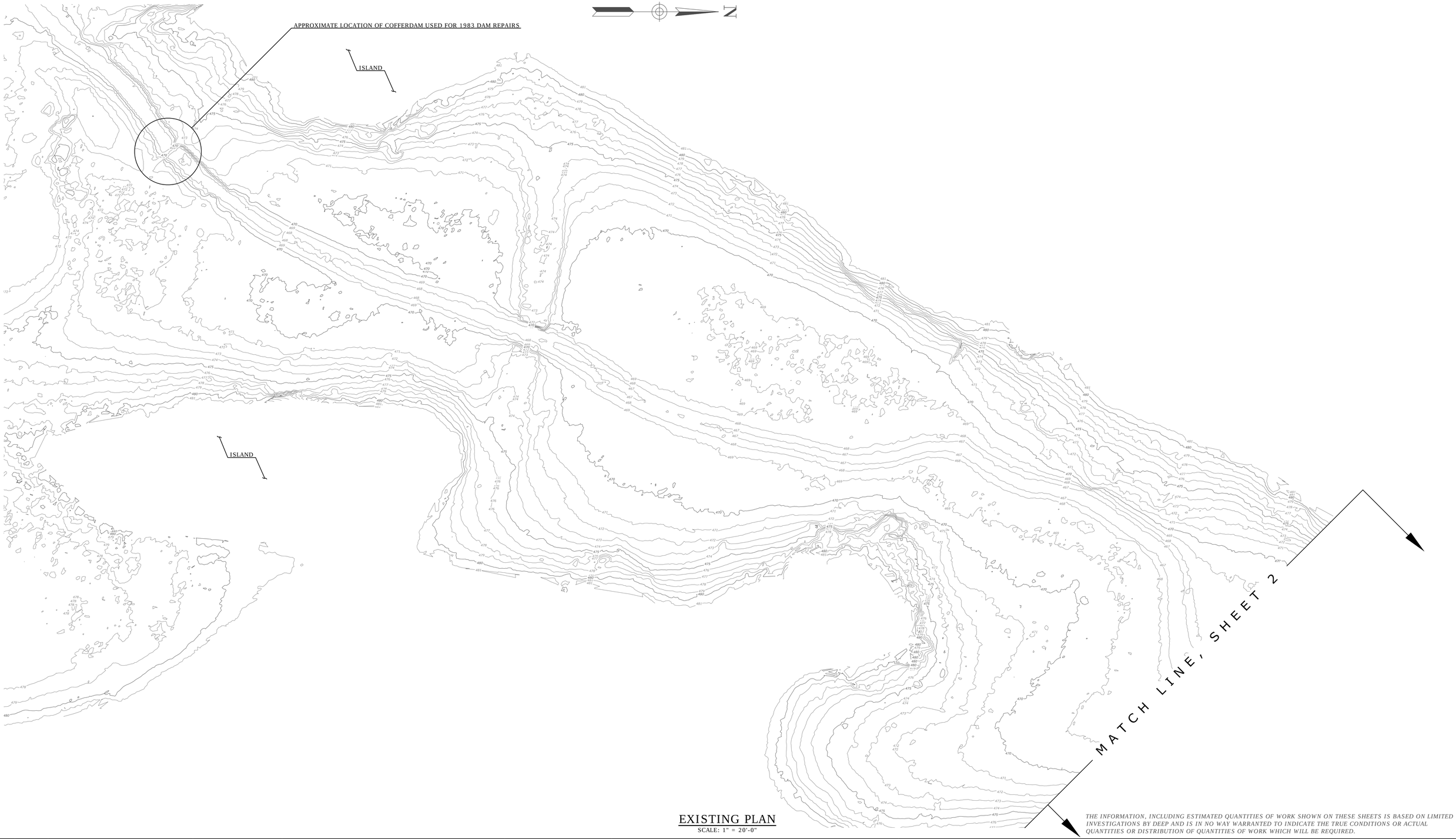
PREPARED FOR:
STATE OF CONNECTICUT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
EXISTING PLAN (1 OF 2)

SIZE	PROJECT	FILE NAME	NUMBER	REV.
D	BASHAN LAKE DAM	FD	12012.1	

SHEET 2 OF 24



EXISTING PLAN

SCALE: 1" = 20'-0"

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REVISIONS

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DESIGN	K.K.
DRAWN	M.D.C.
CHECKED	S.T.A.
DATE	03/26/14

FINAL DESIGN

STATE OF CONNECTICUT — JOHN A. COSTELLO — 15008 — LICENSED PROFESSIONAL ENGINEER

WMC CONSULTING ENGINEERS

• WENGELL, McDONNELL & COSTELLO •
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR:
STATE OF CONNECTICUT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
EXISTING PLAN (2 OF 2)

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	BASHAN LAKE DAM	FD	12012.1		3	24


BASHAN LAKE
NEW REINFORCED CONCRETE GATE CHAMBER
SEE SHEETS 6 AND 7 OF 24
REINFORCED CONCRETE REPAIR, RIGHT
UPSTREAM EMBANKMENT WALL (ENTIRE LENGTH)
SEE SHEET 8 OF 24
171.81'
S02°41'30"E
REMOVE 15" TREE AND GRUB ROOTS
REINFORCED CONCRETE REPAIR,
RIGHT SPILLWAY TRAINING WALL
SEE SHEET 8 OF 24
50'-0" PREFABRICATED STEEL BRIDGE
SEE ABUTMENT SHEETS 11 AND 12 OF 24
5'-0" CLEAR BRIDGE WIDTH (I.D.)
FULL POOL LIMIT
ELEV. 486'±
CORE#1
CORE#2
CORE#3
TESTPIT#1
TESTPIT#2
CONCRETE
GRASS
REMOVE EXISTING
FENCE
CUT STONE DAM
N73°47'50"E
22.79'
25' DOWNSTREAM LIMIT OF CLEARING AND GRUBBING (TYP.)
ROCK OVERHANG
ELEV. 468±
ROCK OVERHANG
ELEV. 472±
STEPPED LEDGE
AREA
LEDGE
NEW WINGWALL
SEE SHEET 12 OF 24
REMOVE AND REPLACE
EXISTING FENCE
SEE SHEET 16 OF 24
BEGIN, REPLACE FENCE
MESH USING EXISTING
FENCE POSTS
APPROXIMATE
GRADING LIMITS
N/F
CHARLES & ADELELE MIERZEJEWSKI
VOL 362 P 271
STONE PILLAR (TYP.)
NAIL IN
WOOD POST
146.99'
S02°41'30"E
BIT
OHE
END, REPLACE FENCE
MESH USING EXISTING
FENCE POSTS
DRIVEWAY RECONSTRUCTION
SEE SHEET 15 FOR DETAILS
45.62'
S70°30'50"W
REMOVE EXISTING
3.5' GATE
REPLACE EXISTING
12' DOUBLE GATE
12' GATE
TEMPORARY STABILIZED CONSTRUCTION
ENTRANCE SEE SHEET 17 OF 24
N/F
STATE OF CONNECTICUT
6' CHAIN LINK FENCE
SF
#206
FL = 464.3±
2' HIGH STONE OUTLET
#205
#204
#203
#202
#103
#102
DP#102
TOP SPILLWAY
ELEV. 486.0
N54°24'10"E
115.26'
"LAUREL LANE"
EDGE OF WATER
WETLANDS (CT)
ROCK OVERHANG
ELEV. 488±
DOWNSTREAM RIGHT STONE
MASONRY WALL TO BE REPAIRED
SEE SHEET 8 OF 24
BUTTRESS AT DOWNSTREAM WALL
SEE SHEETS 5 AND 8 OF 24
FORM BUTTRESS WALL TO EXTEND
LOW LEVEL CONDUIT
NEW LEFT SPILLWAY TRAINING WALL
SEE SHEET 9 OF 24
DOWNSTREAM LEFT STONE MASONRY
WALL TO BE REPAIRED
SEE SHEETS 10 AND 13 OF 24
REMOVE AND DISPOSE OF
EXISTING WOODEN BRIDGE
INTERMEDIATE RIPRAP
SEE SHEET 13 OF 24
PROPOSED CONCRETE CUTOFF
WALL APPROXIMATELY 30' LONG
SEE SHEET 13 OF 24
PROPOSED SPILLWAY SLAB
APPROXIMATELY 28.9' LONG
SEE SHEET 13 OF 24
TEMPORARY SEDIMENTATION
CONTROL SYSTEM (TYP.)
173.66'
N33°37'10"W
LINE
BASHAN LAKE ROAD

PROPOSED PLAN

SCALE: 1" = 10'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY DEEP AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION
REVISIONS		

SUPV.	J.A.C.
DESIGN	K.K.
DRAWN	M.D.C.
CHECKED	S.T.A.
DATE	03/26/14

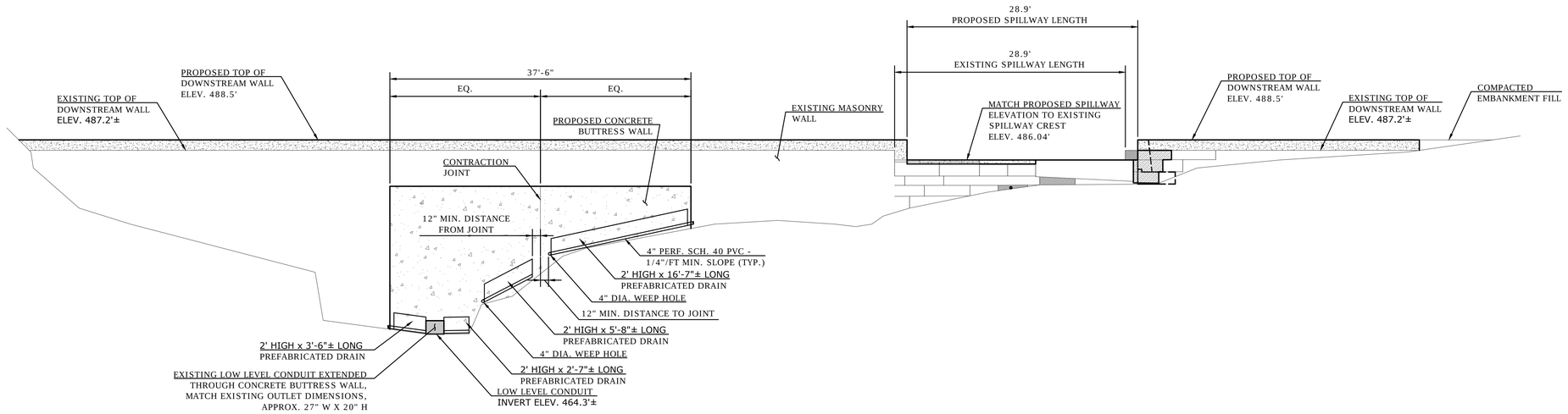
FINAL DESIGN

WMC CONSULTING ENGINEERS
• WENGELL, McDONNELL & COSTELLO •
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR:
STATE OF CONNECTICUT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

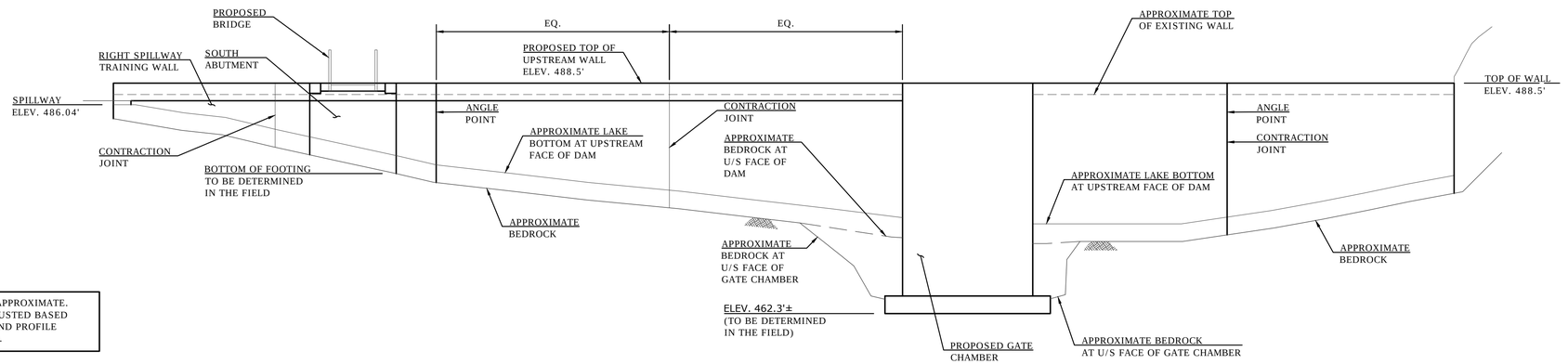
BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
PROPOSED PLAN

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET 4 OF 24
D	BASHAN LAKE DAM	FD	12012.1		



DOWNSTREAM ELEVATION

SCALE: 1" = 8'-0"



BEDROCK ELEVATIONS ARE APPROXIMATE. WALL DEPTHS SHALL BE ADJUSTED BASED ON BEDROCK ELEVATIONS AND PROFILE ENCOUNTERED IN THE FIELD.

UPSTREAM ELEVATION

RIGHT SPILLWAY TRAINING WALL AND RIGHT EMBANKMENT

SCALE: 1" = 8'-0"

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REVISIONS

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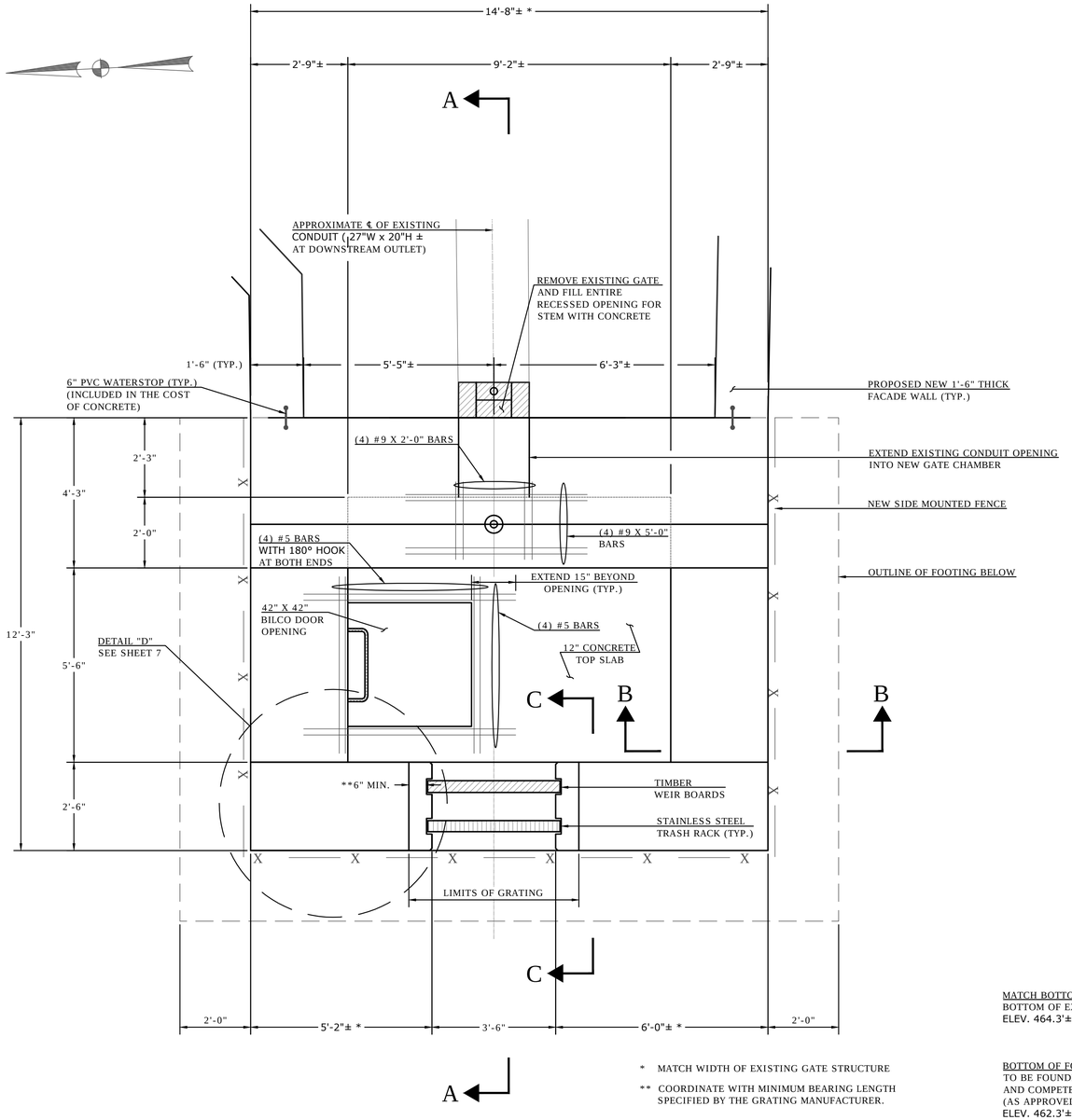
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
ELEVATION VIEWS

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	BASHAN LAKE DAM	FD	12012.1	0	5	24

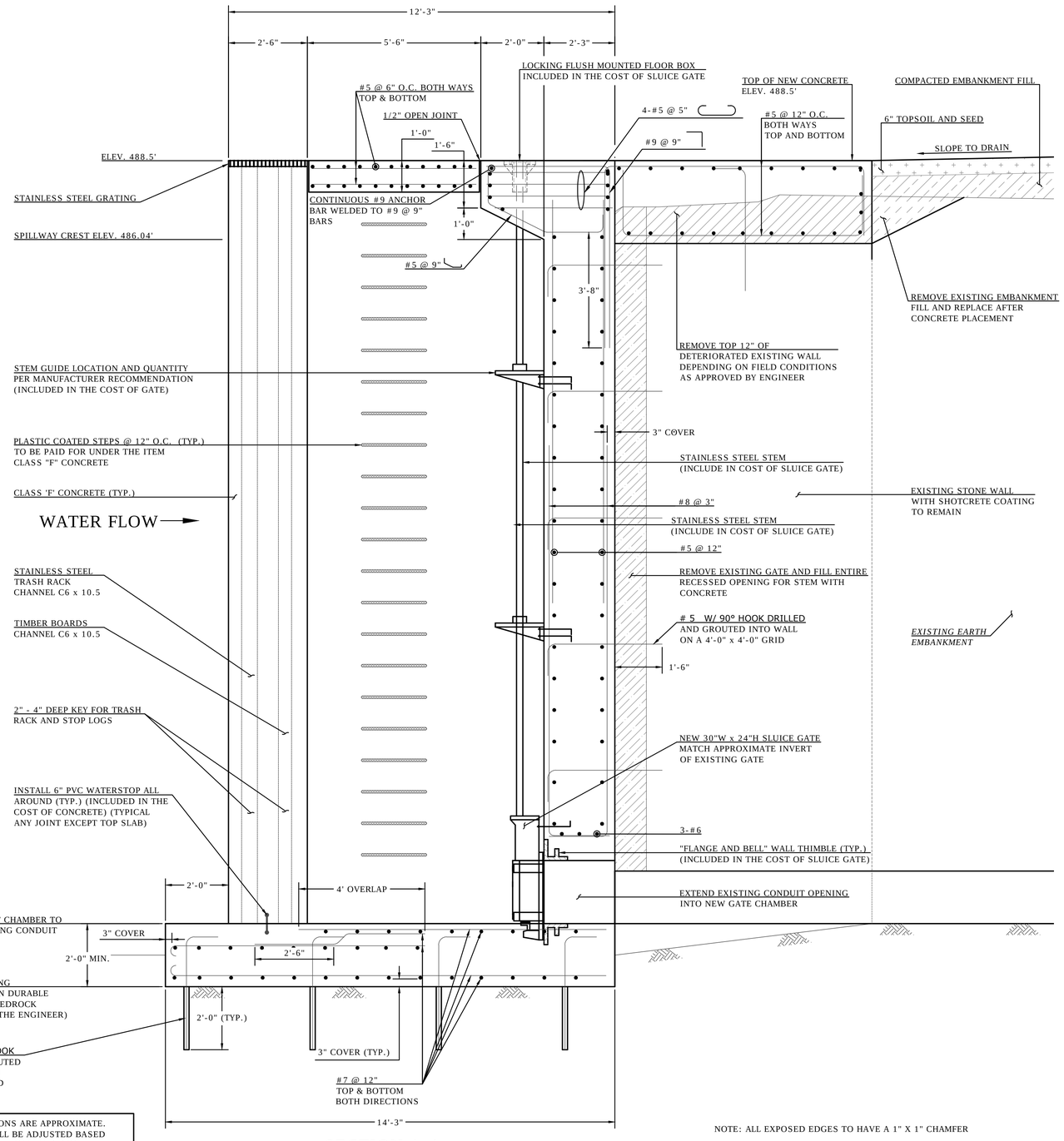


* MATCH WIDTH OF EXISTING GATE STRUCTURE

** COORDINATE WITH MINIMUM BEARING LENGTH SPECIFIED BY THE GRATING MANUFACTURER.

GATE CHAMBER PLAN

SCALE: $\frac{1}{2}$" = 1'-0"



BEDROCK ELEVATIONS ARE APPROXIMATE. WALL DEPTHS SHALL BE ADJUSTED BASED ON BEDROCK ELEVATIONS AND PROFILE ENCOUNTERED IN THE FIELD.

SECTION A-A (SECTION THROUGH GATE CHAMBER)

SCALE: $\frac{1}{2}$" = 1'-0"

NOTE: ALL EXPOSED EDGES TO HAVE A 1" X 1" CHAMFER

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DRAWN	M.D.C.
CHECKED	S.T.A.
DATE	03/26/14

FINAL DESIGN

STATE OF CONNECTICUT JOHN A. COSTELLO 19205 LICENSED PROFESSIONAL ENGINEER

WMC CONSULTING ENGINEERS

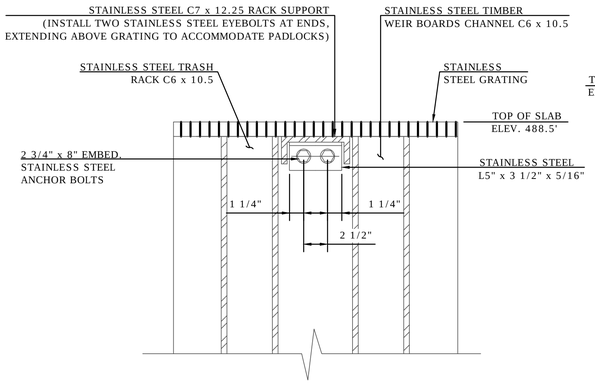
• WENGELL, McDONNELL & COSTELLO •
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR:
STATE OF CONNECTICUT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

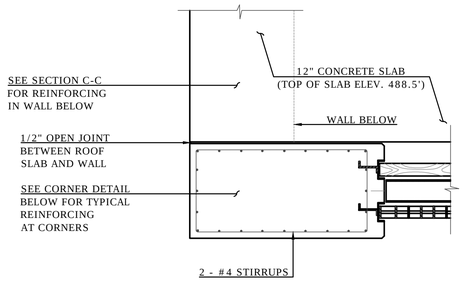
INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
GATE CHAMBER DETAILS (1 OF 2)

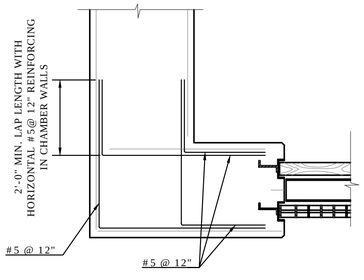
SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	BASHAN LAKE DAM	FD	12012.1		6	24



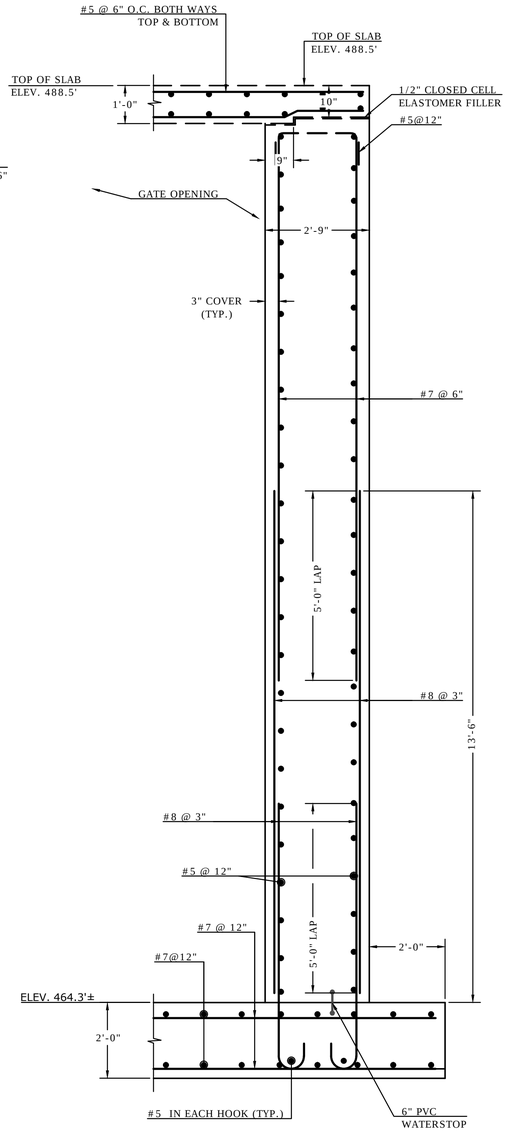
RACK SUPPORT DETAIL
NOT TO SCALE



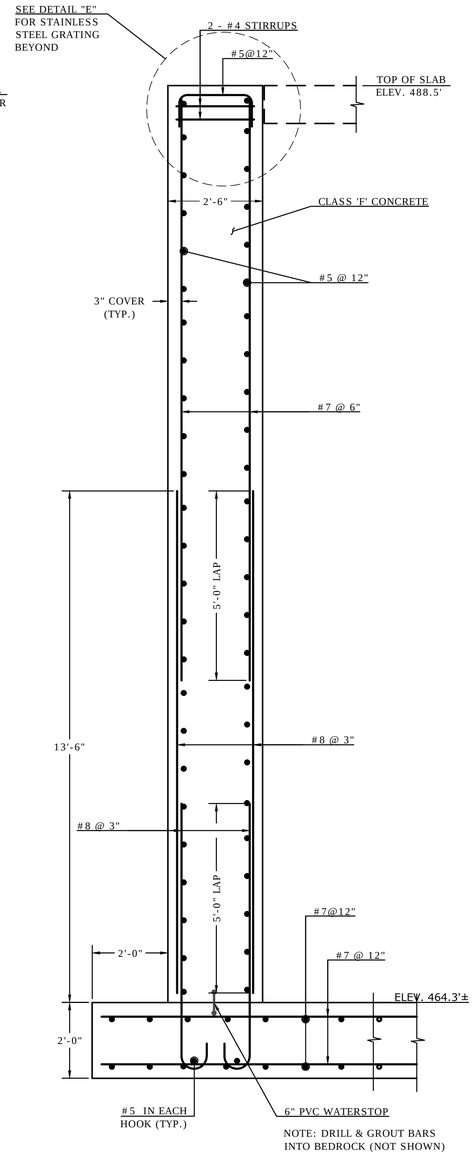
DETAIL "D" (AT SLAB ELEV.)
(N.W. CORNER SHOWN - S.W. CORNER SIMILAR - OPPOSITE HAND)
SCALE: 1/2" = 1'-0"



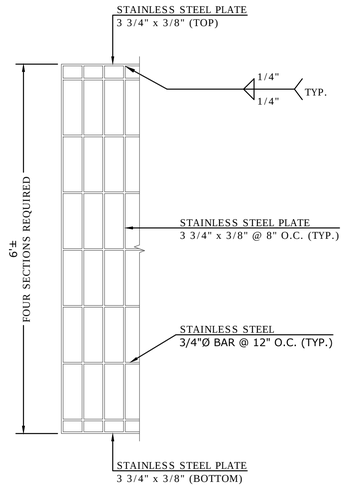
DETAIL "D" (BELOW SLAB ELEV.)
(N.W. CORNER SHOWN - S.W. CORNER SIMILAR - OPPOSITE HAND)
SCALE: 1/2" = 1'-0"



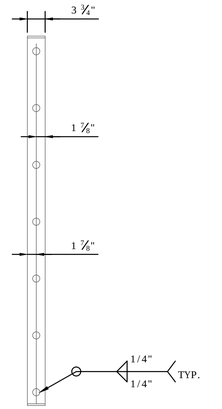
SECTION B-B
(GATE CHAMBER SIDE WALL)
SCALE: 1/2" = 1'-0"



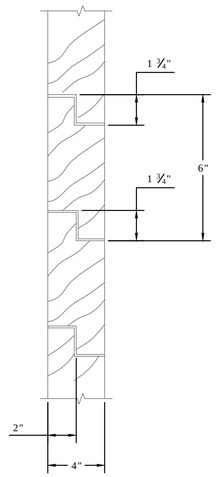
SECTION C-C
(GATE CHAMBER FRONT WALL)
SCALE: 1/2" = 1'-0"



ELEVATION



SECTION



TRASH RACK DETAIL
NOT TO SCALE

TIMBER WEIR BOARDS
NOT TO SCALE

NOTES:

1. NOTCH AS SHOWN, EXCEPT FOR TOP AND BOTTOM PIECES PROVIDE ONE NOTCH ONLY

2. AT THE CONTRACTOR'S OPTION AND WITH THE APPROVAL OF THE ENGINEER, TONGUE AND GROOVE JOINTS MAY BE SUBSTITUTED FOR THOSE SHOWN

3. TIMBER WEIR BOARDS SHALL BE CONSTRUCTED OF NORTHERN RED OAK NO. 1.

DETAIL "E"
SCALE: 1/2" = 1'-0"

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NO.	DATE	DESCRIPTION

REVISIONS

SUPV.	J.A.C.
DESIGN	K.K.
DRAWN	M.D.C.
CHECKED	S.T.A.
DATE	03/26/14

FINAL DESIGN

STATE OF CONNECTICUT · JAMES A. COSTELLO · 19205 · REGISTERED PROFESSIONAL ENGINEER

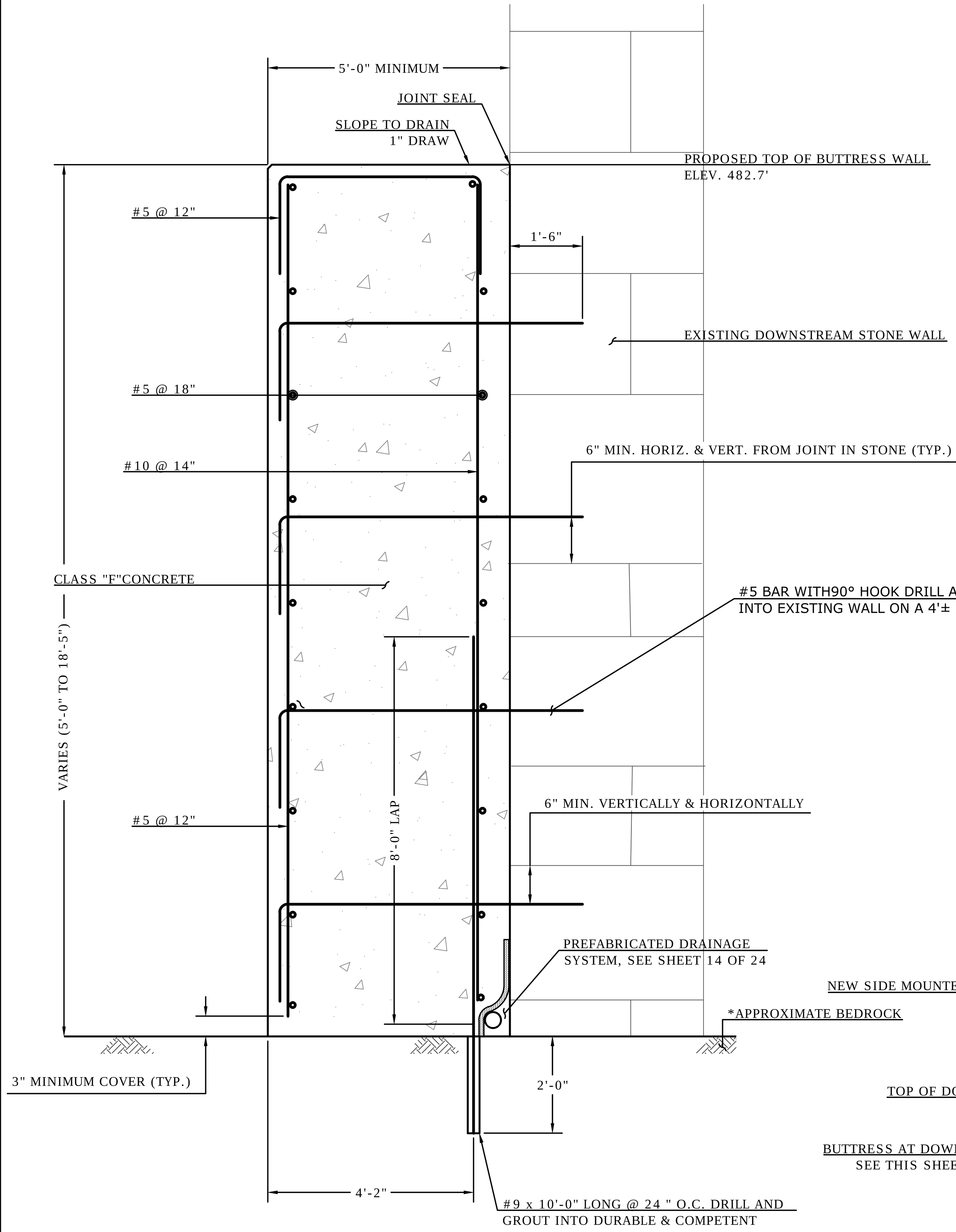
WMC CONSULTING ENGINEERS
• WENGELL, McDONNELL & COSTELLO •
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR:
STATE OF CONNECTICUT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
GATE CHAMBER DETAILS (2 of 2)

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET
D	BASHAN LAKE DAM	FD	12012.1		7 OF 24

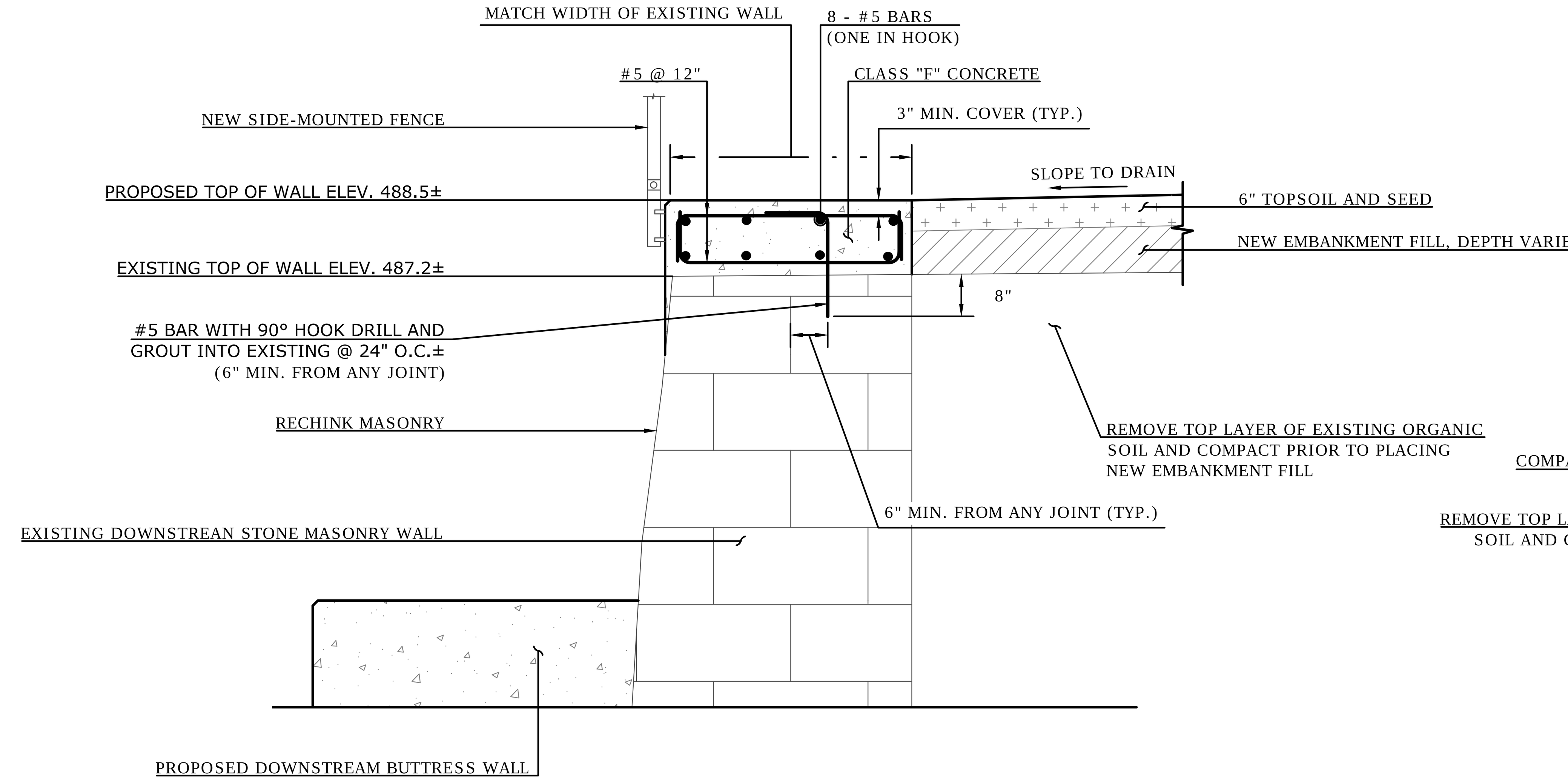


NOTE: DOWNSTREAM BUTTRESS WALL TO BE POURED IN MAXIMUM 2FT LIFTS TO AVOID CRUSHING PREFABRICATED DRAINAGE SYSTEM.

*BEDROCK ELEVATIONS ARE APPROXIMATE. WALL DEPTHS SHALL BE ADJUSTED BASED ON BEDROCK ELEVATIONS AND PROFILE ENCOUNTERED IN THE FIELD.

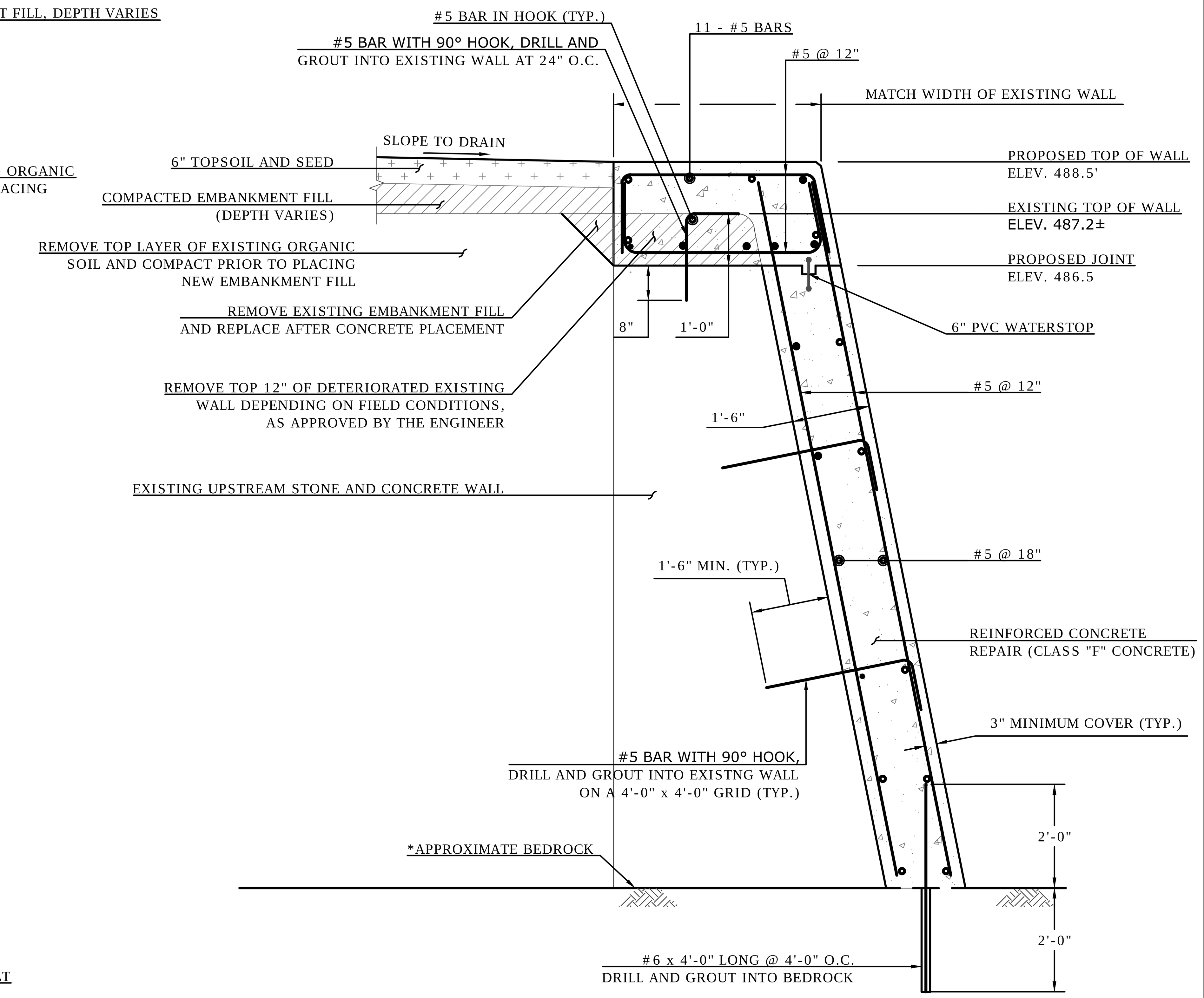
DOWNSTREAM BUTTRESS WALL SECTION

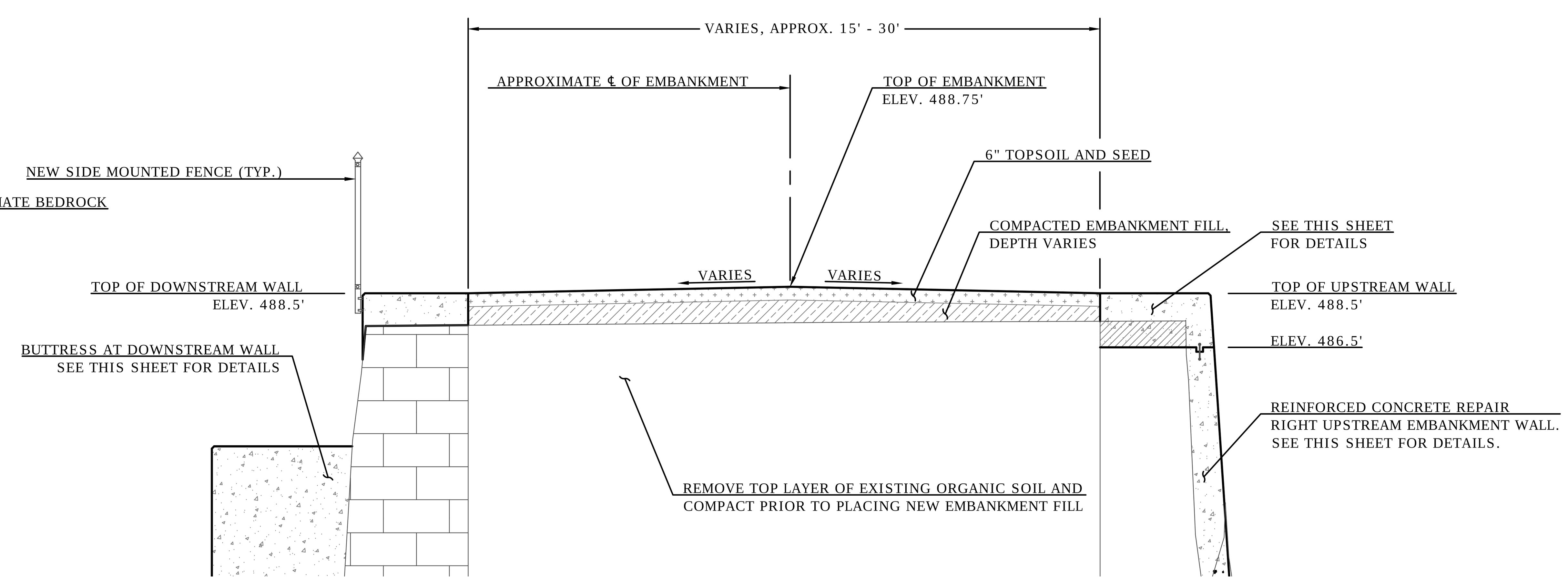
SCALE: ½"=1'-0"



DOWNSTREAM RIGHT STONE-MASONRY WALL SECTION

SCALE: ½"=1'-0"





TYPICAL SECTION THROUGH RIGHT EMBANKMENT

SCALE: NOT TO SCALE

*BEDROCK ELEVATIONS ARE APPROXIMATE. WALL DEPTHS SHALL BE ADJUSTED BASED ON BEDROCK ELEVATIONS AND PROFILE ENCOUNTERED IN THE FIELD.

REPAIRS OF EXISTING WALLS, RIGHT UPSTREAM EMBANKMENT AND RIGHT SPILLWAY TRAINING WALLS SECTION

SCALE: ½"=1'-0"

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NO.	DATE	DESCRIPTION

REVISIONS

SUPV. J.A.C.
DESIGN K.K.
DRAWN M.D.C.
CHECKED S.T.A.
DATE 03/26/14

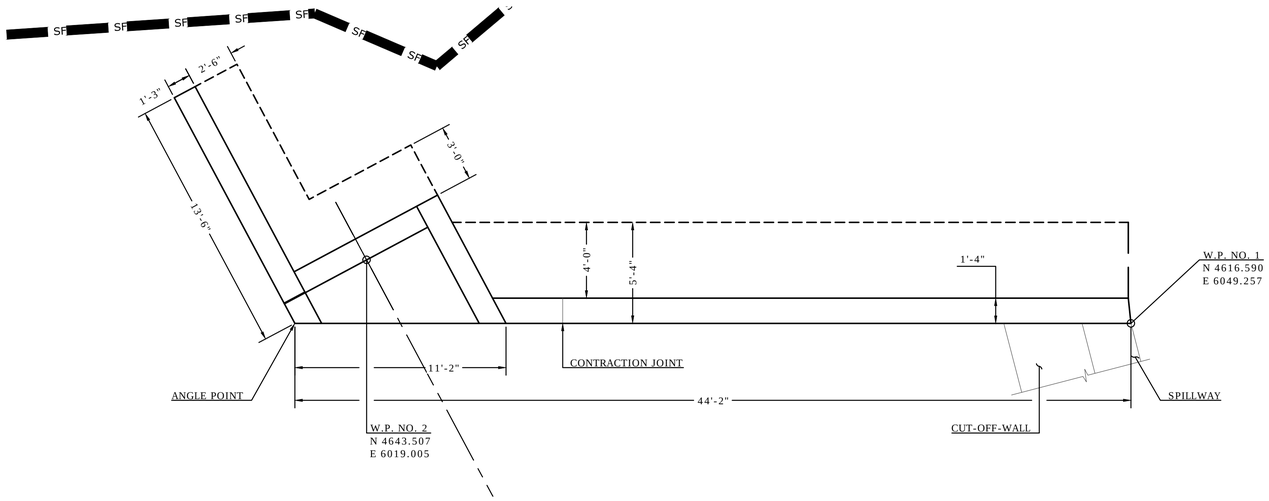
FINAL DESIGN

WMC CONSULTING ENGINEERS
• WENGELL, McDONNELL & COSTELLO •
87 HOLMES ROAD
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR:
STATE OF CONNECTICUT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

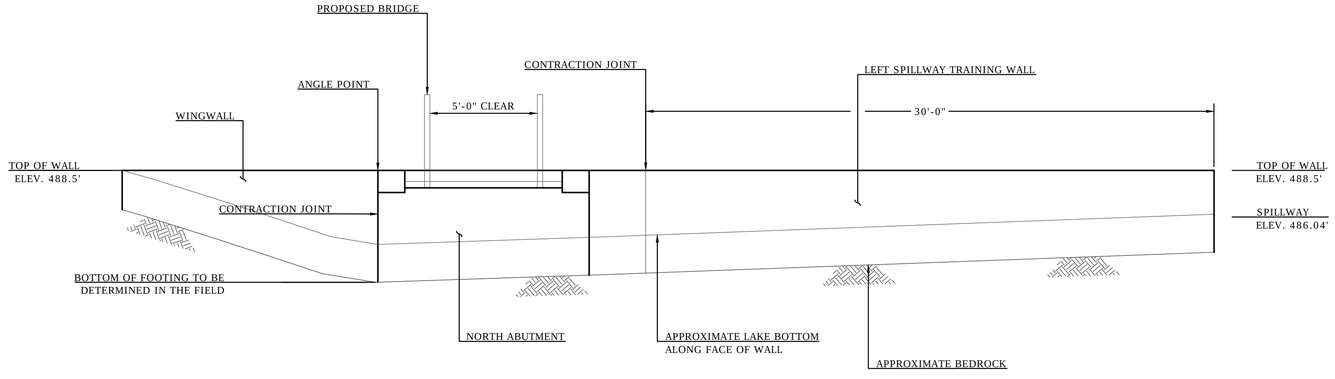
BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
RIGHT EMBANKMENT WALL DETAILS

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET
D	BASHAN LAKE DAM	FD	12012.1		8 OF 24



LEFT SPILLWAY TRAINING WALL PLAN VIEW

SCALE: 1/4" = 1'-0"



BEDROCK ELEVATIONS ARE APPROXIMATE. WALL DEPTHS SHALL BE ADJUSTED BASED ON BEDROCK ELEVATIONS AND PROFILE ENCOUNTERED IN THE FIELD.

NOTE: 1. FOR "LEFT SPILLWAY TRAINING WALL SECTION" SEE SHEET 10.
2. FOR "NORTH ABUTMENT AND WINGWALL DETAILS" SEE SHEET 12.

LEFT SPILLWAY TRAINING WALL ELEVATION

SCALE: 1/4" = 1'-0"

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NO.	DATE	DESCRIPTION

REVISIONS

SUPV.	J.A.C.
DESIGN	K.K.
DRAWN	M.D.C.
CHECKED	S.T.A.
DATE	03/26/14

FINAL DESIGN

WMC CONSULTING ENGINEERS

• WENGELL, McDONNELL & COSTELLO •
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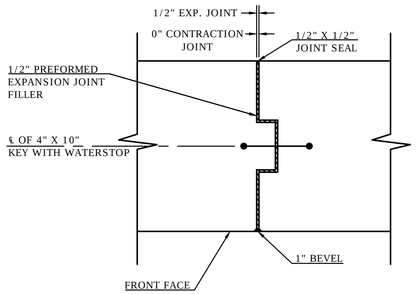
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR:
STATE OF CONNECTICUT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
LEFT EMBANKMENT WALL DETAILS (1 OF 2)

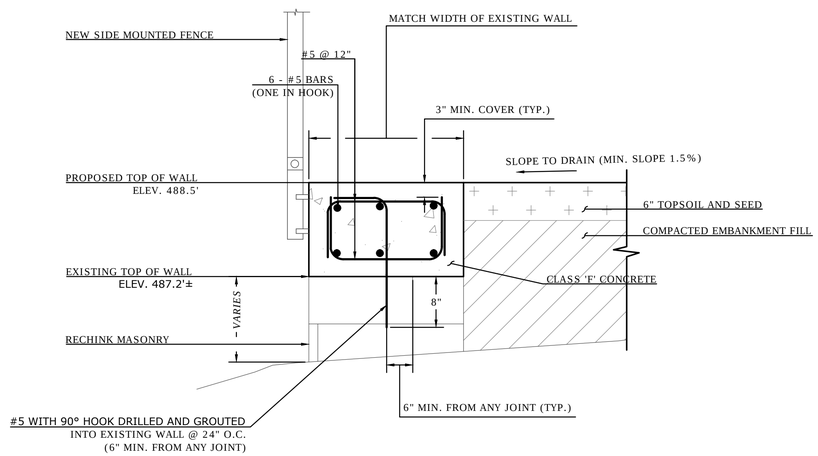
SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	BASHAN LAKE DAM	FD	12012.1		9	24



NOTE:
1) JOINT SEAL TO EXTEND FROM TOP OF FOOTING TO TOP OF WALL.
2) NO REINFORCEMENT SHALL PASS THROUGH EXPANSION OR CONTRACTION JOINTS.
3) REINFORCEMENT SHALL PASS THROUGH CONSTRUCTION JOINTS.

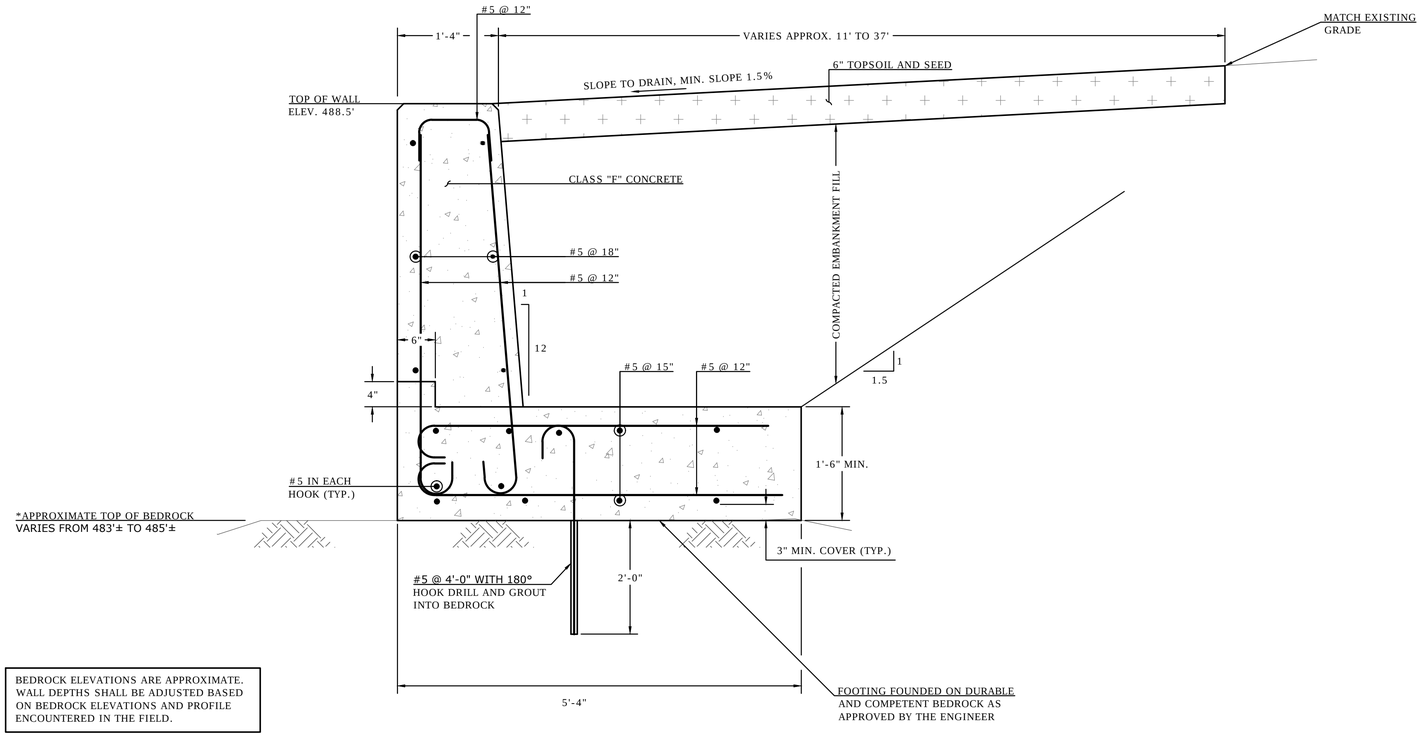
VERTICAL STEM JOINT DETAIL

SCALE: $\frac{3}{4}$"=1'-0"



REPAIRS OF EXISTING DOWNSTREAM LEFT STONE-MASONRY WALL SECTION

SCALE: 1"=1'-0"



BEDROCK ELEVATIONS ARE APPROXIMATE. WALL DEPTHS SHALL BE ADJUSTED BASED ON BEDROCK ELEVATIONS AND PROFILE ENCOUNTERED IN THE FIELD.

LEFT SPILLWAY TRAINING WALL SECTION

SCALE: 1"=1'-0"

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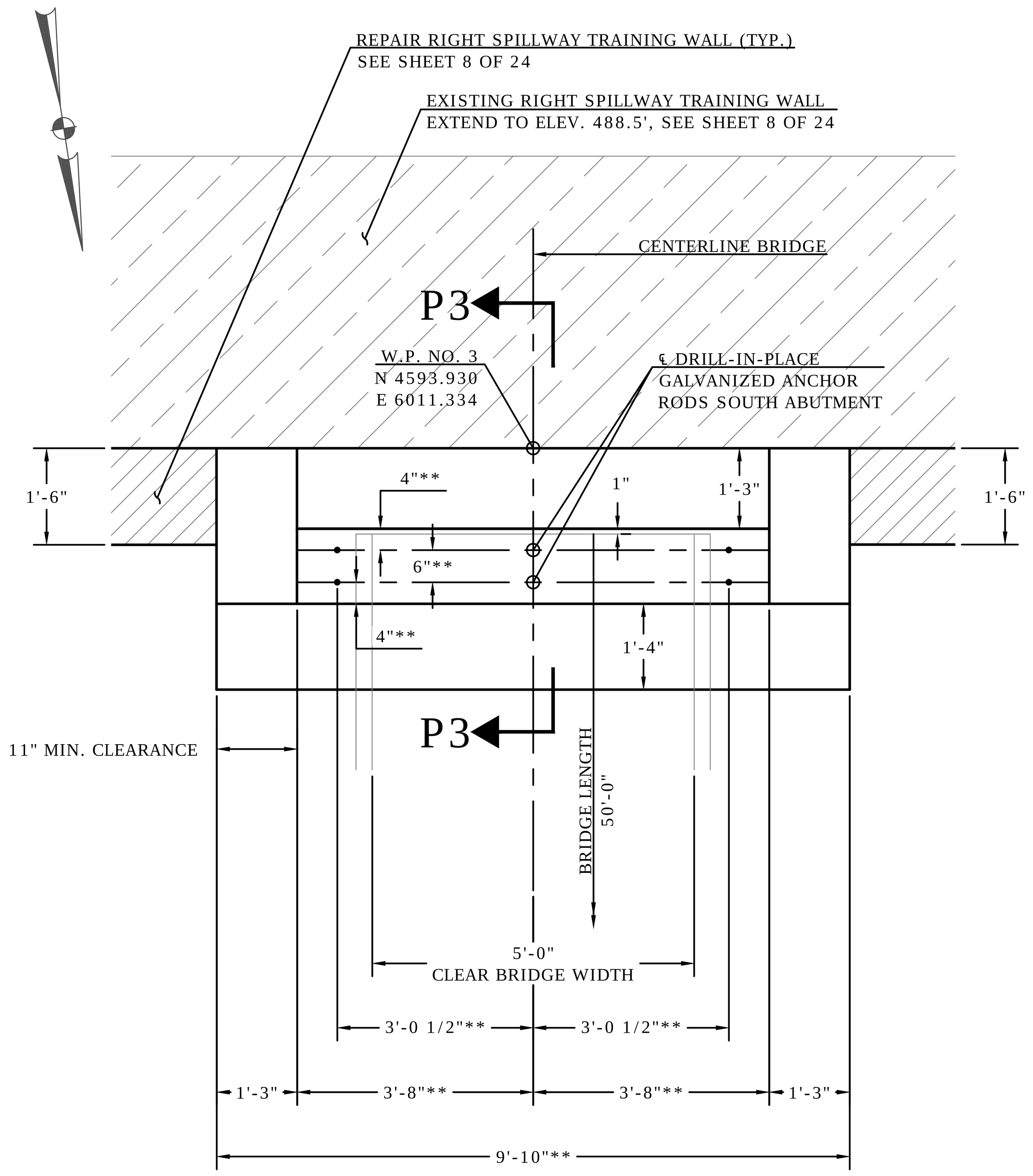
79 ELM STREET
HARTFORD, CONNECTICUT 06106

BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
LEFT EMBANKMENT WALL DETAILS (2 OF 2)

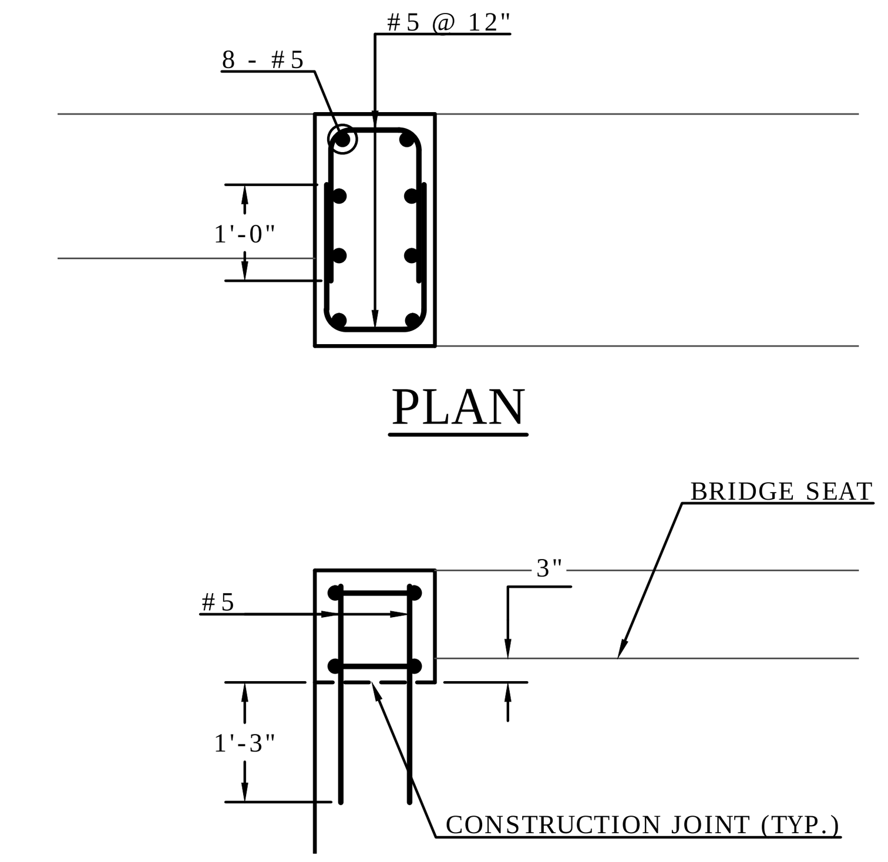
SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	BASHAN LAKE DAM	FD	12012.1		10	24



SOUTH ABUTMENT - PLAN

SCALE: ½"=1'-0"

** NOTE:
BRIDGE SEAT ELEVATIONS, ANCHOR BOLT LOCATIONS AND CENTERLINE OF BEARING TO BE DETERMINED PER PREFABRICATED STEEL TRUSS BRIDGE MANUFACTURER.



NOTE: KEEPER BLOCK SIMILAR AT SOUTH ABUTMENT CORNER

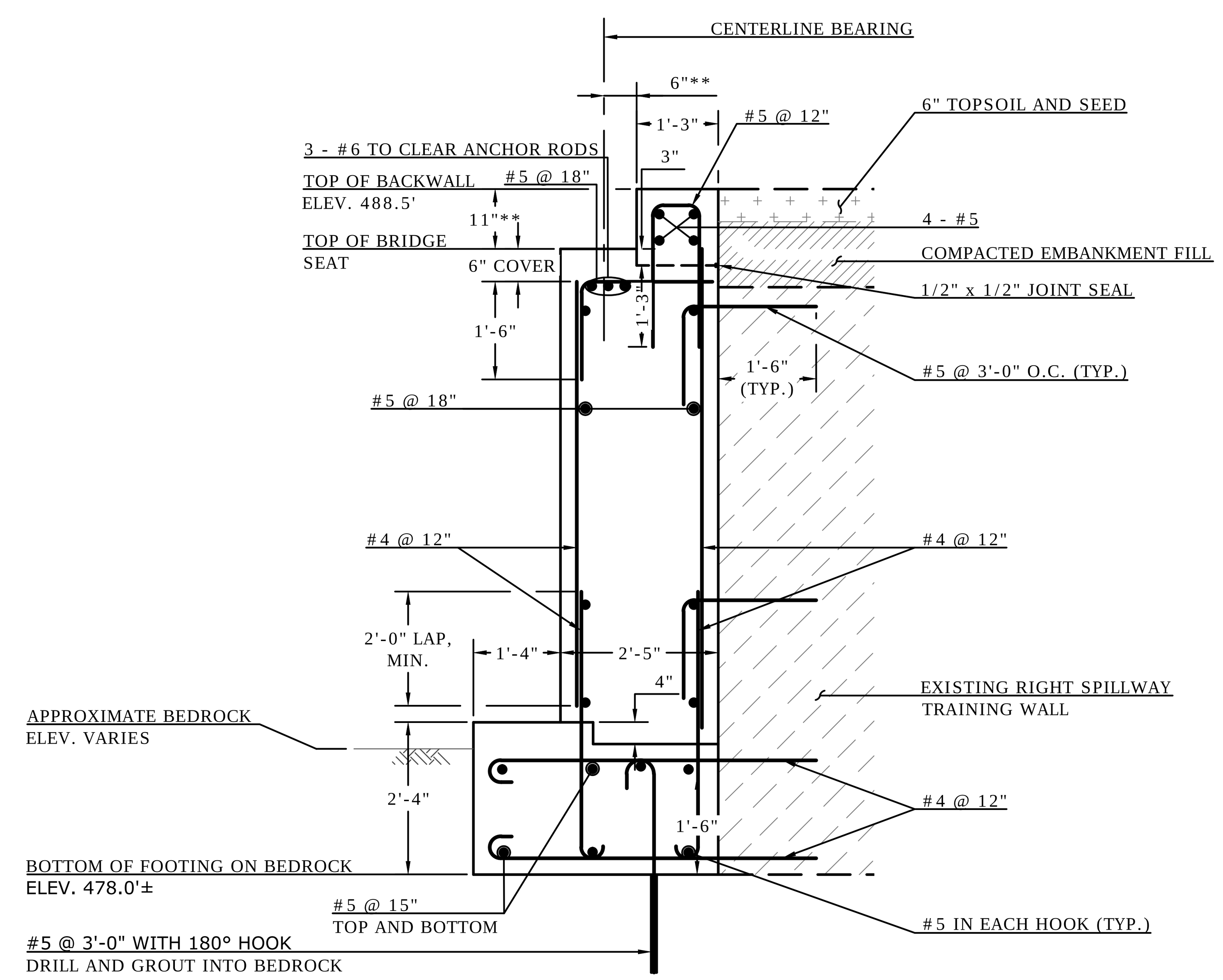
ELEVATION

KEEPER BLOCK DETAILS

(SOUTH ABUTMENT)

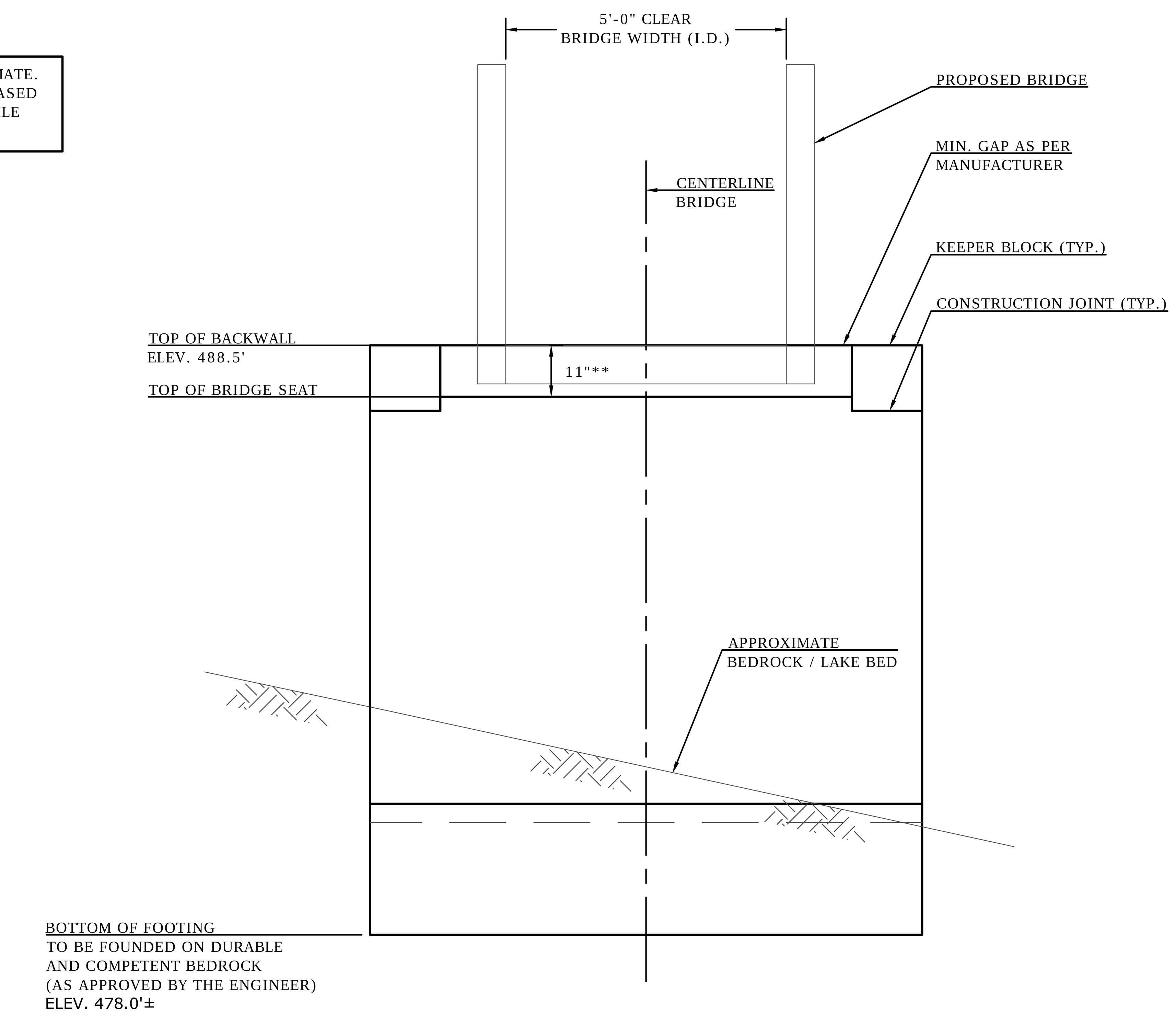
SCALE: 1/2"=1'-0"

BEDROCK ELEVATIONS ARE APPROXIMATE. WALL DEPTHS SHALL BE ADJUSTED BASED ON BEDROCK ELEVATIONS AND PROFILE ENCOUNTERED IN THE FIELD.



SOUTH ABUTMENT - SECTION P3-P3

SCALE: ½"=1'-0"



NOTE:
BOTTOM OF FOOTING FOR SOUTH ABUTMENT TO BE FOUNDED ON ROCK. IF ROCK ELEVATION IS HIGHER THAN 478' THEN REMOVE ROCK TO ELEVATION 478' WITHOUT DISTURBING THE EXISTING RIGHT SPILLWAY TRAINING WALL.

SOUTH ABUTMENT - ELEVATION VIEW

SCALE: ½"=1'-0"

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NO.	DATE	DESCRIPTION

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DESIGN	K.K.
DRAWN	M.D.C.
CHECKED	S.T.A.
DATE	03/26/14

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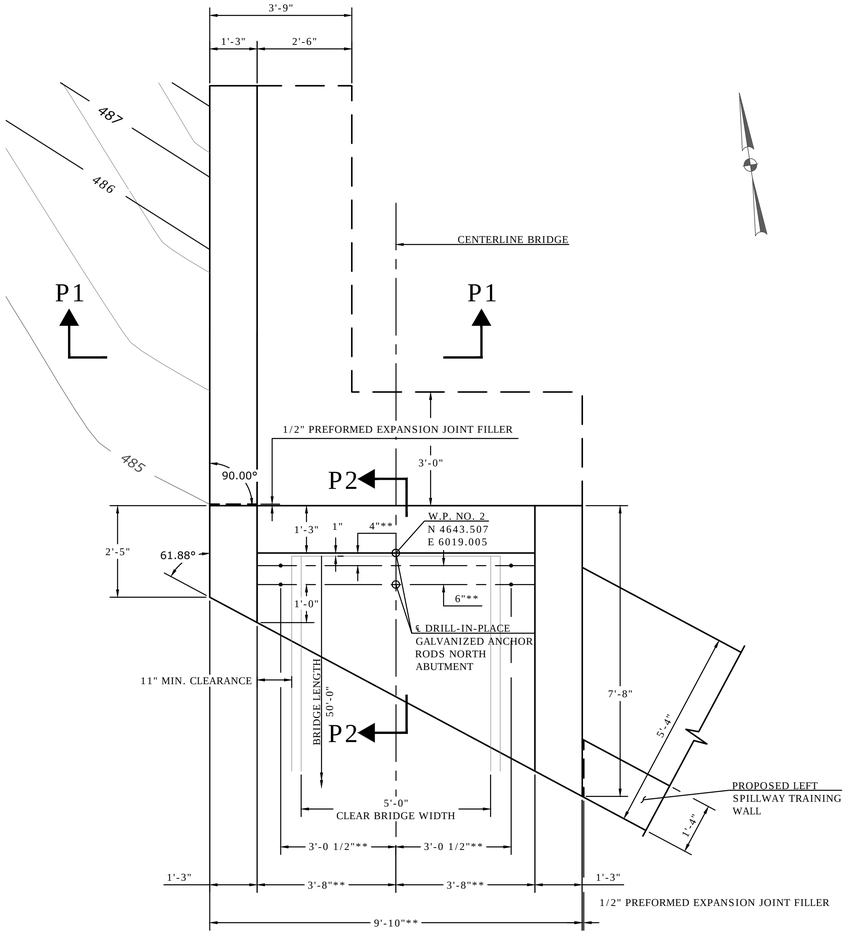
INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
SOUTH BRIDGE ABUTMENT

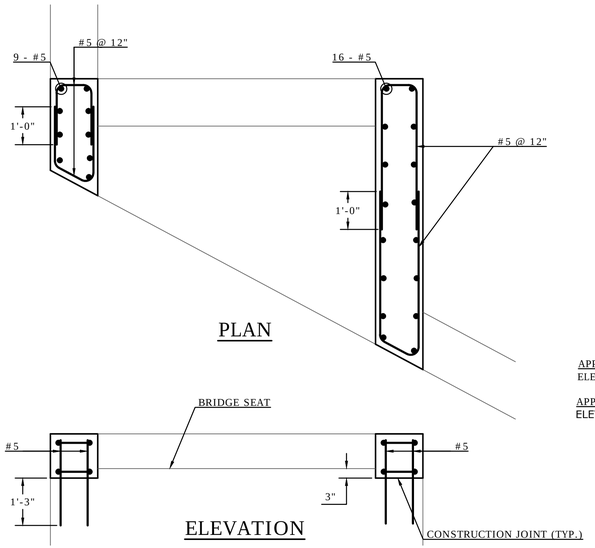
SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET
D	BASHAN LAKE DAM	FD	12012.1		11 OF 24



NORTH ABUTMENT - PLAN

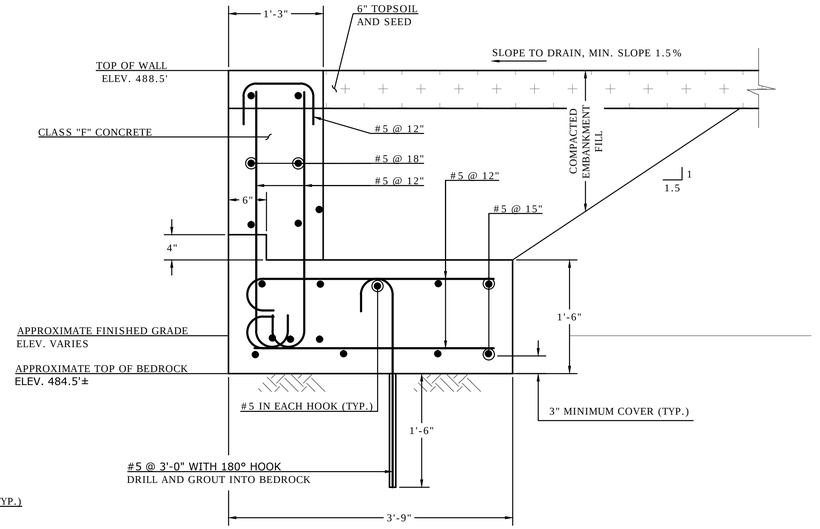
SCALE: $\frac{1}{2}$"=1'-0"

** NOTE:
BRIDGE SEAT ELEVATIONS, ANCHOR BOLT LOCATIONS AND CENTERLINE OF BEARING TO BE DETERMINED PER PREFABRICATED STEEL TRUSS BRIDGE MANUFACTURER.



KEEPER BLOCK DETAILS
(NORTH ABUTMENT)

SCALE: 1/2"=1'-0"



WINGWALL SECTION P1 - P1
(NORTH ABUTMENT)

SCALE: 1"=1'-0"

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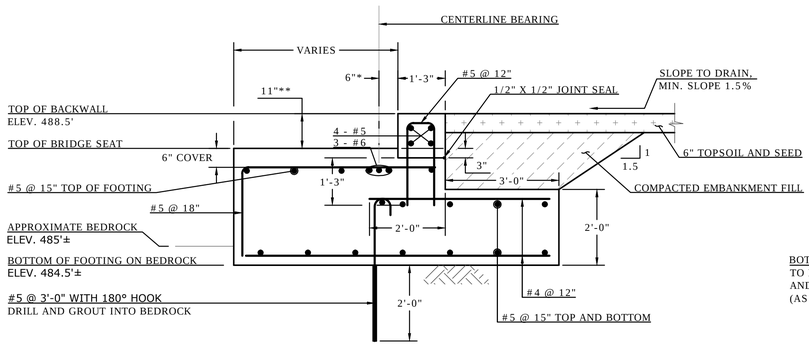
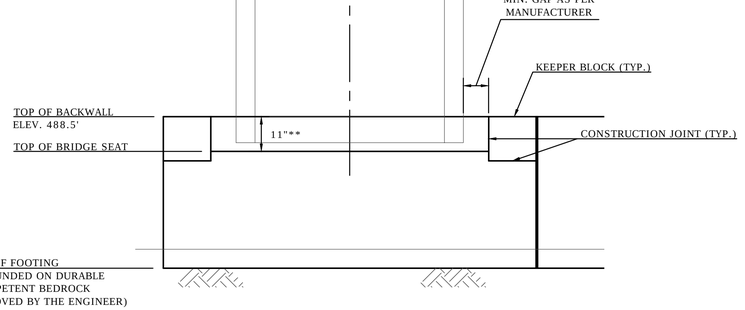


NORTH ABUTMENT - SECTION P2-P2

SCALE: $\frac{1}{2}$"=1'-0"



NOTE:
BOTTOM OF FOOTING FOR NORTH ABUTMENT TO BE FOUNDED ON ROCK. IF ROCK ELEVATION IS HIGHER THAN 482' THEN REMOVE ROCK TO ELEVATION 482'.

NORTH ABUTMENT - ELEVATION VIEW

SCALE: $\frac{1}{2}$"=1'-0"

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DESIGN	K.K.
DRAWN	M.D.C.
CHECKED	S.T.A.
DATE	03/26/14

FINAL DESIGN

STATE OF CONNECTICUT · JOHN A. COSTELLO · 15209 · REGISTERED PROFESSIONAL ENGINEER

WMC CONSULTING ENGINEERS
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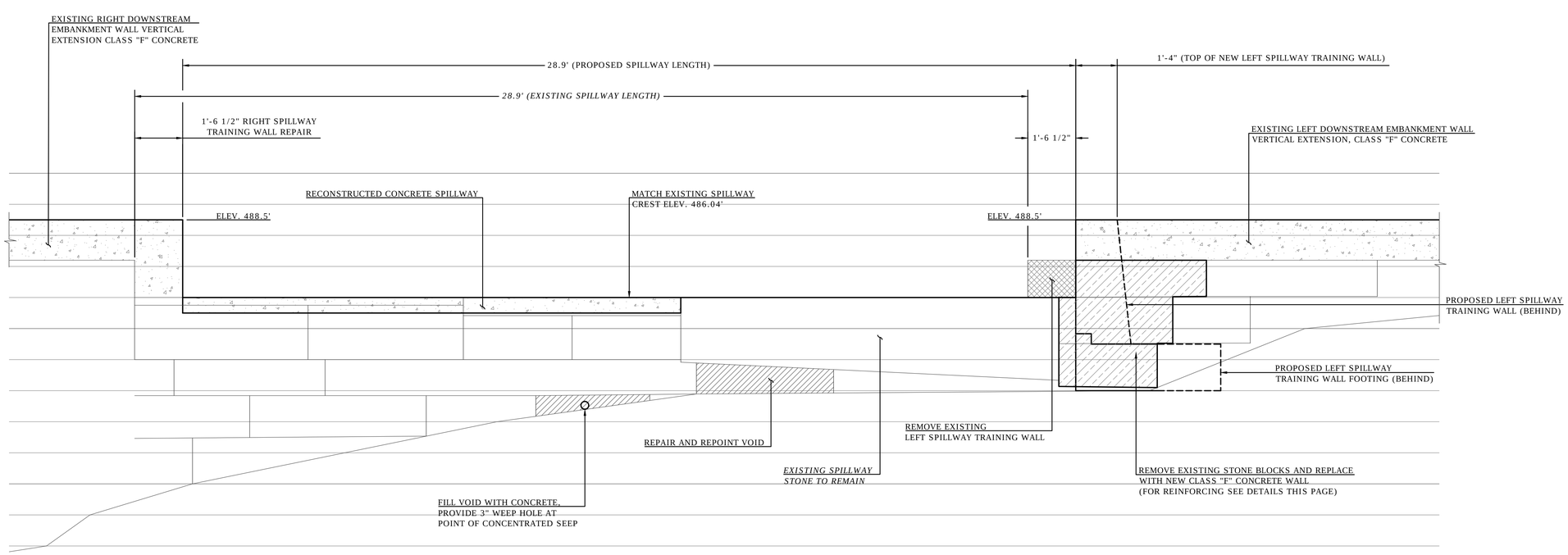
NEWINGTON, CT 06111
(860) 667-9624

PREPARED FOR:
STATE OF CONNECTICUT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

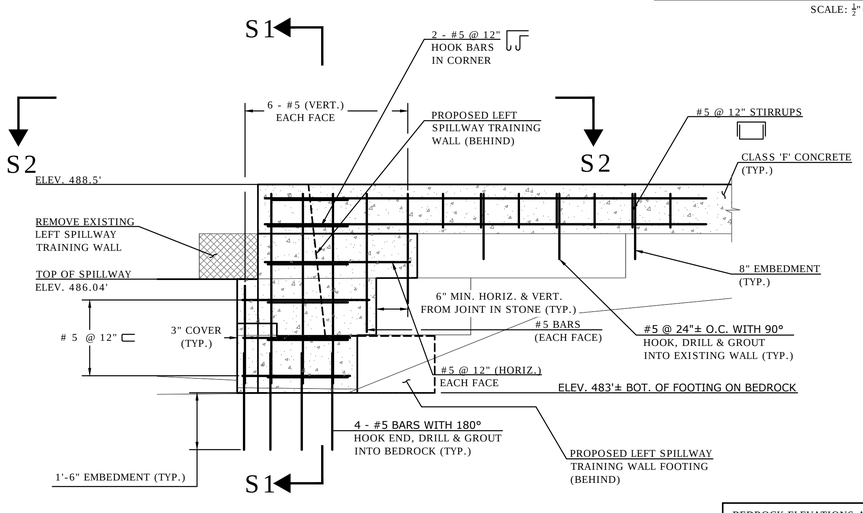
BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
NORTH BRIDGE ABUTMENT

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	BASHAN LAKE DAM	FD	12012.1		12	24



DOWNSTREAM SPILLWAY ELEVATION

SCALE: $\frac{1}{2}$"= 1'-0"



REINFORCING DETAIL
CONNECTION OF DOWNSTREAM LEFT WALL TO LEFT SPILLWAY TRAINING WALL

SCALE: $\frac{1}{2}$"= 1'-0"

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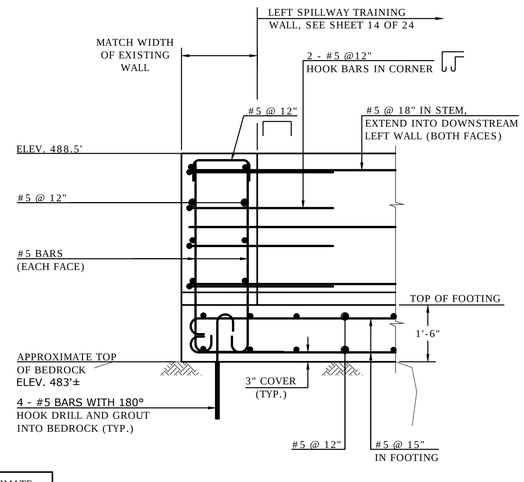
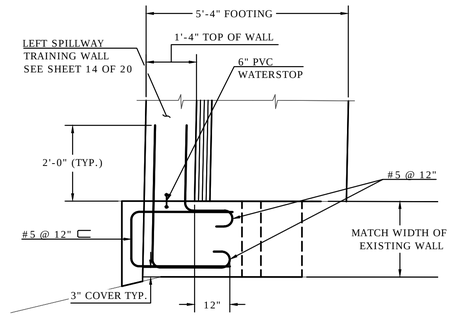


SECTION S1 - S1
CONNECTION OF DOWNSTREAM LEFT WALL TO LEFT SPILLWAY TRAINING WALL

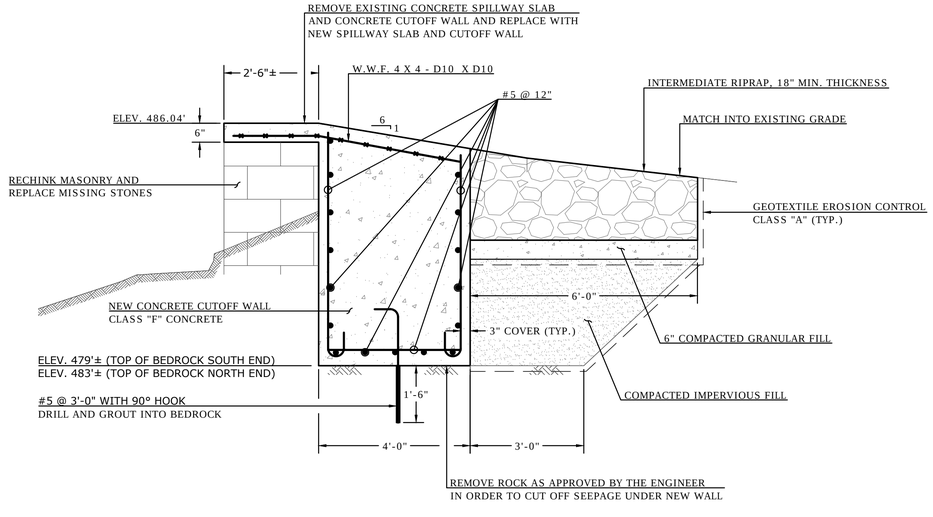
SCALE: $\frac{1}{2}$"= 1'-0"



NOTE :
REINFORCING IN LEFT SPILLWAY TRAINING WALL NOT SHOWN FOR CLARITY

VIEW S2 - S2
CONNECTION OF DOWNSTREAM LEFT WALL TO LEFT SPILLWAY TRAINING WALL

SCALE: $\frac{1}{2}$"= 1'-0"



SPILLWAY SECTION

SCALE: $\frac{1}{2}$"= 1'-0"

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DESIGN	K.K.
DRAWN	M.D.C.
CHECKED	S.T.A.
DATE	03/26/14

FINAL DESIGN

STATE OF CONNECTICUT JOHN A. COSTELLO 19205 LICENSED PROFESSIONAL ENGINEER

WMC CONSULTING ENGINEERS
• WENGELL, McDONNELL & COSTELLO •
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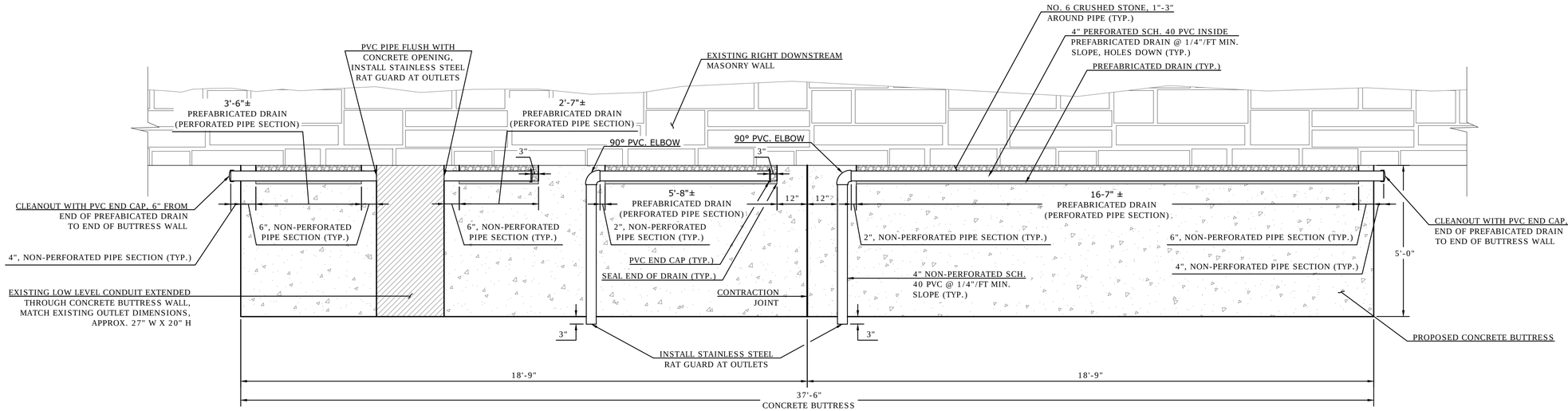
PREPARED FOR:
STATE OF CONNECTICUT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
SPILLWAY DETAILS

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	BASHAN LAKE DAM	FD	12012.1		13	24

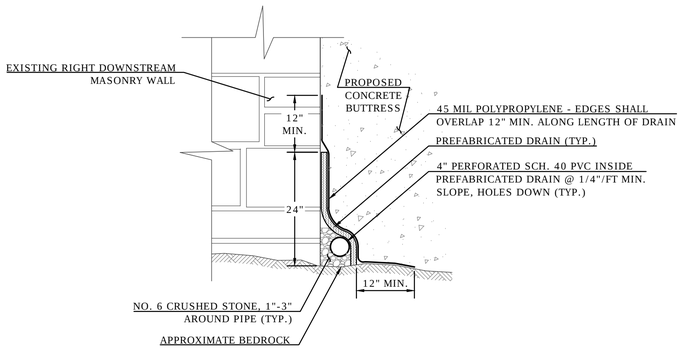


PREFABRICATED DRAIN PLAN VIEW

SCALE: $\frac{1}{2}$"=1'-0"

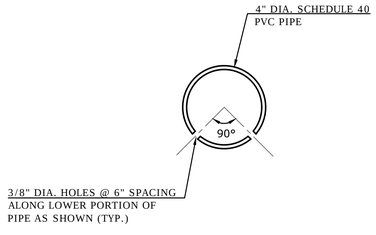
NOTE:

SEE SHEET 5 OF 20 FOR DOWNSTREAM ELEVATION VIEW.



PREFABRICATED DRAIN SECTION

SCALE: $\frac{3}{4}$"=1'-0"



PERFORATED PVC PIPE

SCALE: NOT TO SCALE

NOTE:
HOLES SHALL BE NO CLOSER THAN 3" TO END OF PREFABRICATED DRAIN SECTION.

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STATE OF CONNECTICUT — JOHN A. COSTELLO — 19205 — LICENSED PROFESSIONAL ENGINEER

WMC CONSULTING ENGINEERS

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PREPARED FOR:
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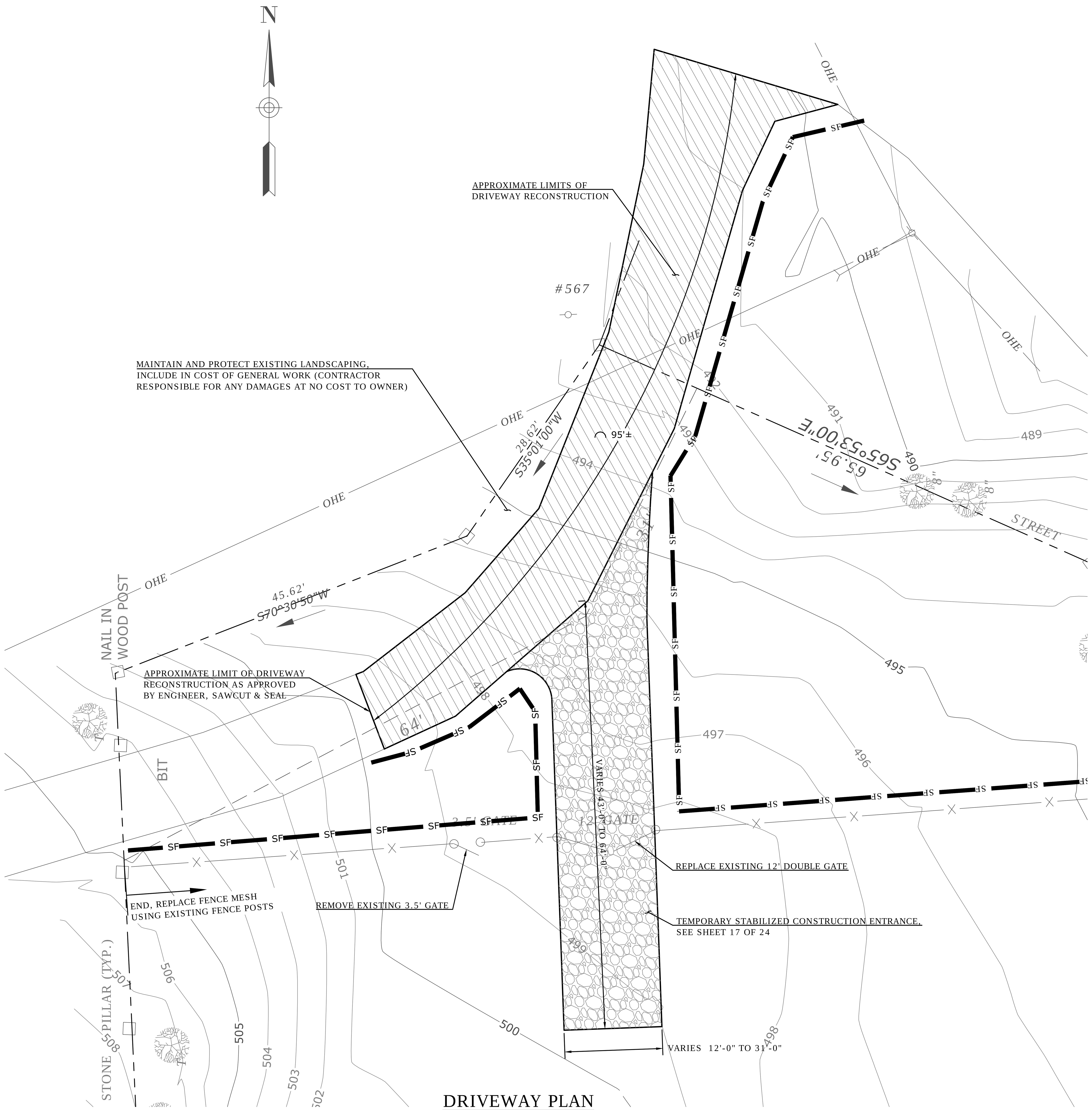
INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

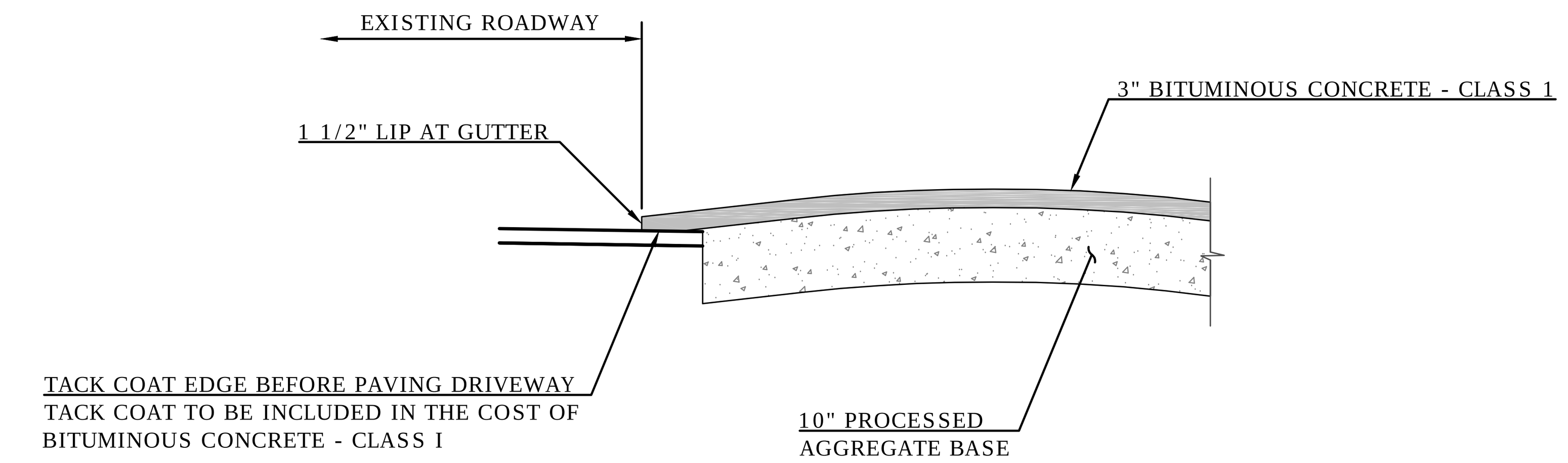
BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
BUTTRESS AND PREFABRICATED DRAIN DETAILS

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	BASHAN LAKE DAM	FD	12012.1		14	24



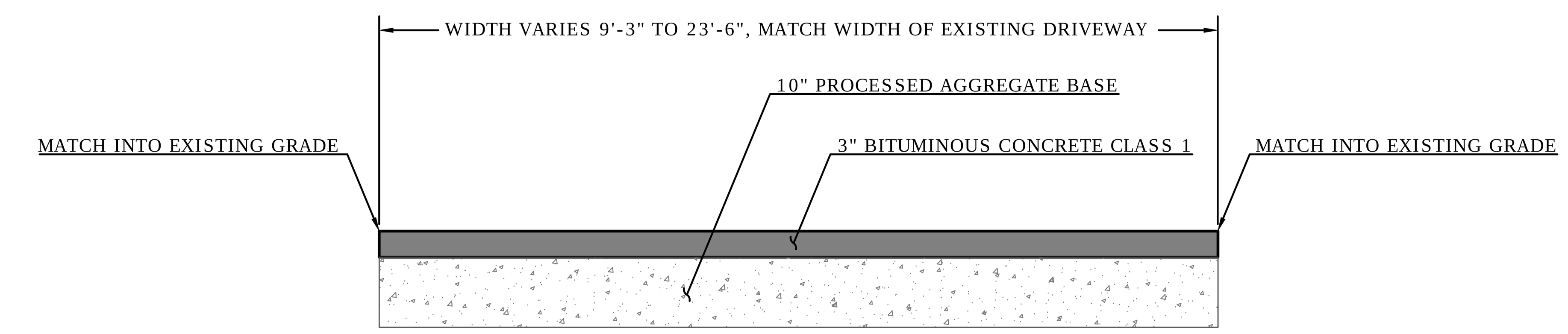
DRIVEWAY PLAN

SCALE: 1" = 8'-0"



TYPICAL END OF DRIVEWAY
DETAIL AT ROADWAY

NOT TO SCALE



TYPICAL DRIVEWAY SECTION

NOT TO SCALE

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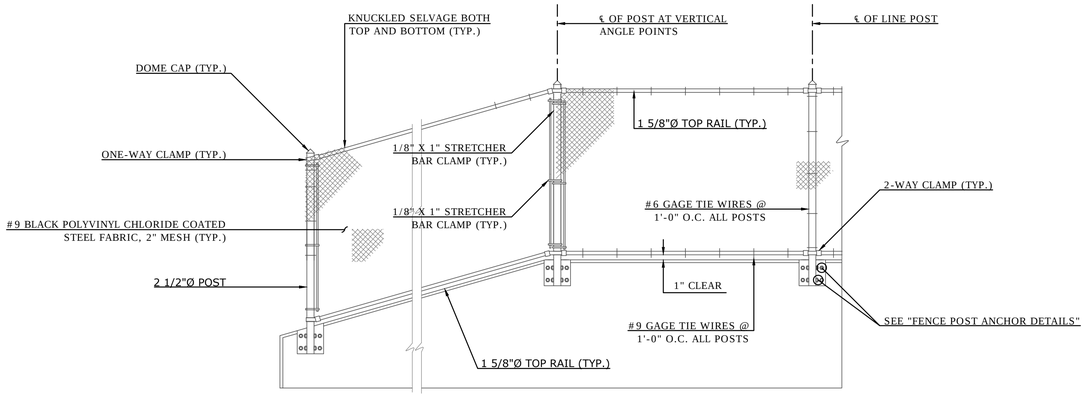
INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

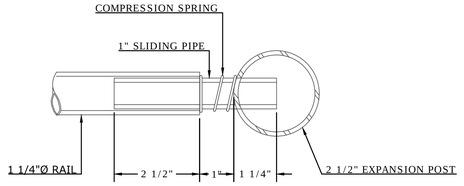
BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
DRIVEWAY PLAN AND DETAILS

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET 15 OF 24
D	BASHAN LAKE DAM	FD	12012.1		



ELEVATION - 6' PVC CHAIN LINK FENCE (SIDE MOUNTED ON WALL)

NOT TO SCALE

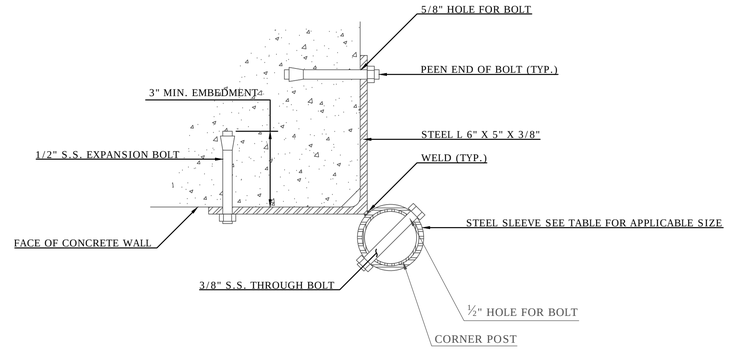


EXPANSION SLEEVE DETAIL

NOT TO SCALE

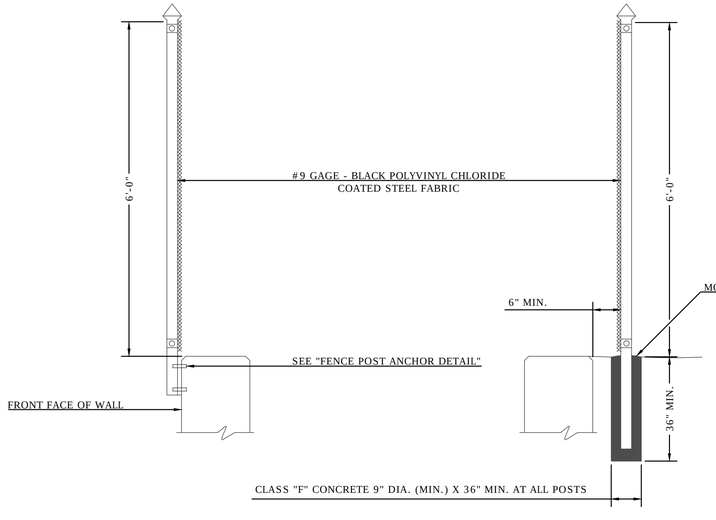
NOTE:

EXPANSION SLEEVE REQUIRED FOR BOTH RAILS AT EACH EXPANSION POST



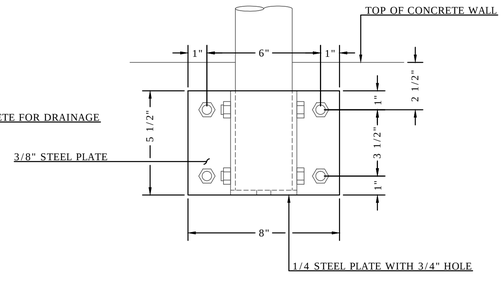
SECTIONAL PLAN - OUTSIDE CORNET MOUNT

NOT TO SCALE



SIDE MOUNT TO WALL DETAIL

NOT TO SCALE



BEHIND WALL DETAIL

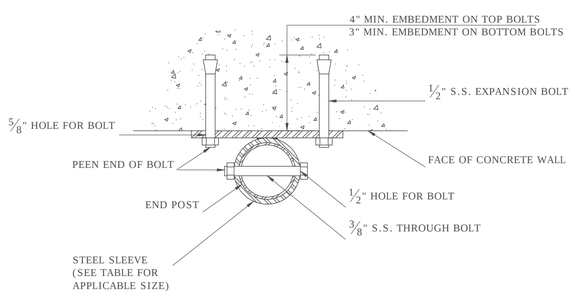
NOT TO SCALE

FENCE POST ANCHOR DETAIL - SIDE MOUNT

NOT TO SCALE

NOTE:

FENCE POST ANCHORS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION



SECTIONAL PLAN - SIDE MOUNT

NOT TO SCALE

REQUIRED POST SIZE	REQUIRED SLEEVE SIZE
2"	2 ½"
2 ½"	3"
3"	3 ½"
3 ½"	4"

NOTES:

1. ALL POSTS SHALL BE INSTALLED VERTICALLY.
2. ALL RAILS SHALL BE SET PARALLEL TO THE TOP OF WALL.
3. CHAINLINK FENCE FABRIC SHALL BE #9 GAGE STEEL WIRE, GALVANIZED AND PVC-COATED AND WOVEN INTO 2" MESH. THE COLOR SHALL BE BLACK. PVC-COATED SHALL BE CLASS 2B, THERMALLY FUSED AND BONDED.
4. STEEL POSTS AND RAILS SHALL BE PVC COATED SCHEDULE 40 STEEL PIPE IN ACCORDANCE WITH RR-F-191/3C GRADE A.
5. THE LENGTH OF THE FENCE FOR PAYMENT SHALL BE THE ACTUAL NUMBER OF LINEAR FEET OF CHAIN LINK FENCE, INSTALLED AND ACCEPTED, MEASURED HORIZONTALLY BETWEEN POSTS WITHIN THE LIMITS SHOWN ON PLANS.
6. FOR ADDITIONAL INFORMATION, SEE SPECIAL PROVISIONS "6' POLYVINYL CHLORIDE CHAIN LINK FENCE."

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY DEEP AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION

REVISIONS

SUPV.	J.A.C.
DESIGN	K.K.
DRAWN	M.D.C.
CHECKED	S.T.A.
DATE	03/26/14

FINAL DESIGN

STATE OF CONNECTICUT · JOHN A. COSTELLO · 19205 · REGISTERED PROFESSIONAL ENGINEER

WMC CONSULTING ENGINEERS

• WENGELL, McDONNELL & COSTELLO •
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PREPARED FOR:
STATE OF CONNECTICUT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
FENCE DETAILS

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	BASHAN LAKE DAM	FD	12012.1		16	24

1. SET POSTS AND EXCAVATE A 6"x6" TRENCH. SET POSTS DOWN SLOPE. ANGLE 10° UPSLOPE FOR STABILITY AND SELF CLEANING.

2. ATTACH THE WIRE MESH FENCING TO POST.

3. ATTACH GEOTEXTILE TO THE WIRE FENCING AND EXTEND IT TO THE TRENCH.

4. BACKFILL THE TRENCH AND COMPACT THE EXCAVATED SOIL.

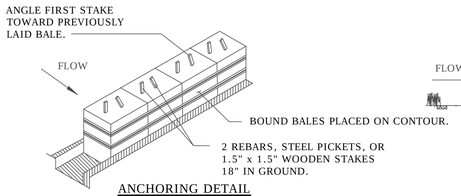
* WHEN INSTALLATION OF TRENCH IS IMPRACTICAL, ALTERNATE INSTALLATION SHALL BE TO LAY 6" FLAP HORIZONTALLY ON GROUND AND BURY FLAP BY RAMP SOIL OR STONE UP TO CONTROL FENCE. DEPTH OF RAMP SHALL BE AS REQUIRED TO HOLD DOWN FLAP WITHOUT LEAKAGE UNDER CONTROL FENCE WHILE MAINTAINING MINIMUM HEIGHT.

GEOTEXTILE FENCE SYSTEM

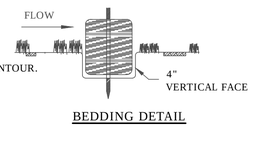
REFER TO PAGE 5-11-35 "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL" AND PAGE 55 "ON-SITE MITIGATION FOR CONSTRUCTION ACTIVITIES".

SEDIMENTATION CONTROL SYSTEM INSTALLATION

N.T.S.



ANCHORING DETAIL



BEDDING DETAIL

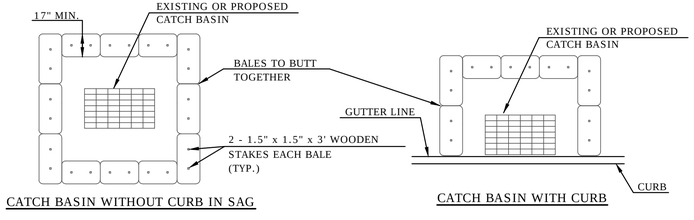
HAY BALE CONSTRUCTION SPECIFICATIONS:

1. HAY BALES SHALL BE PLACED AROUND NEWLY INSTALLED CATCH BASINS IN SAGS AND DROP INLETS TO PREVENT SEDIMENTATION AND OTHER DEBRIS FROM ACCUMULATING ON THE GRATE OR IN THE SUMP. HAY BALES SHOULD BE KEPT CLEAN AND FREE OF DEBRIS TO FACILITATE FLOW.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4", AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR REBARS DRIVEN THROUGH THE BALE. THE FIRST STAKE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

REFER TO PAGE 5-11-30 "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL" AND PAGE 53 "ON-SITE MITIGATION FOR CONSTRUCTION ACTIVITIES".

HAY BALE DETAIL

N.T.S.



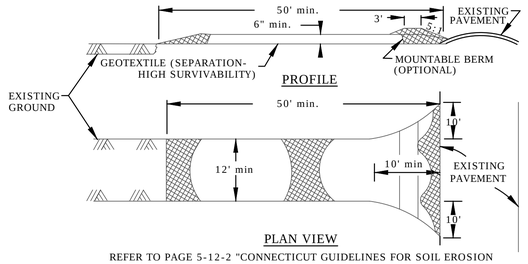
CATCH BASIN WITHOUT CURB IN SAG

CATCH BASIN WITH CURB

REFER TO PAGE 5-11-33 "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL" AND PAGE 40 "ON-SITE MITIGATION FOR CONSTRUCTION ACTIVITIES".

SEDIMENTATION CONTROL DETAILS

N.T.S.



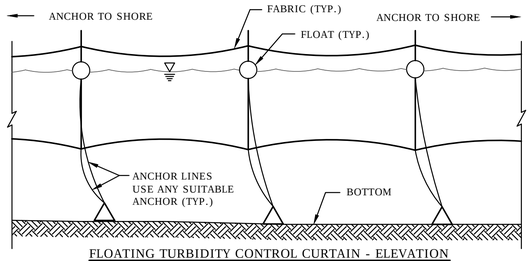
REFER TO PAGE 5-12-2 "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL" AND PAGE 50 "ON-SITE MITIGATION FOR CONSTRUCTION ACTIVITIES".

CONSTRUCTION SPECIFICATION:

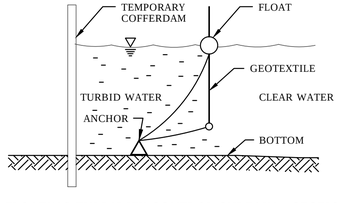
1. STONE SIZE - USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FT (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30' MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN 6".
4. WIDTH - 12' MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. GEOTEXTILE - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. GEOTEXTILE WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SETTLING AREA SIZED TO HOLD THE VOLUME OF WATER USED DURING ANY 2-HOUR PERIOD.
9. PERIODIC INSPECTION AND NECESSARY MAINTENANCE SHALL BE PROVIDED AFTER EACH RAINFALL.
10. THE COST OF CONSTRUCTING THE STABILIZED CONSTRUCTION ENTRANCE WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE GENERAL WORK.

STABILIZED CONSTRUCTION ENTRANCE

N.T.S.



FLOATING TURBIDITY CONTROL CURTAIN - ELEVATION



FLOATING TURBIDITY CONTROL CURTAIN - SECTION

REFER TO PAGE 5-11-41 "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL".

TURBIDITY CONTROL CURTAIN

GENERAL

THIS PLAN PROPOSES EROSION CONTROL MEASURES TO HELP CONTROL ACCELERATED EROSION AND SEDIMENTATION AND REDUCE THE DANGER FROM STORM WATER RUNOFF AT THE SITE. THE RUNOFF SHALL BE CONTROLLED BY THE INTERCEPTION, DIVERSION, AND SAFE DISPOSAL OF PRECIPITATION. RUNOFF SHALL ALSO BE CONTROLLED BY STAGING CONSTRUCTION ACTIVITY AND PRESERVING NATURAL VEGETATION WHENEVER POSSIBLE. EXISTING VEGETATION SHALL BE PROTECTED AND ONLY THAT CLEARING AND GRUBBING ABSOLUTELY NECESSARY FOR THE PROPOSED CONSTRUCTION SHALL BE PERFORMED. ALL DISTURBED AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AND CONTOUR, UNLESS OTHERWISE INDICATED ON THE PLANS. THE CONTRACTOR SHALL TAKE SPECIAL CARE WITH HIS CONSTRUCTION METHODS AND SHALL COMPLY WITH THE FOLLOWING GUIDELINES. REFERENCE IS MADE TO THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL" (2002), AS AMENDED. THE GUIDELINES ARE OBTAINABLE FROM THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION, 79 ELM STREET, HARTFORD, CONNECTICUT 06106, AND SHOULD BE USED AS A REFERENCE IN CONSTRUCTING THE EROSION AND SEDIMENTATION CONTROLS INDICATED ON THESE PLANS. AN ADDITIONAL REFERENCE IS THE 1994 CONNDOT PUBLICATION "ON-SITE MITIGATION FOR CONSTRUCTION ACTIVITIES".

EROSION CONTROL

ALL AREAS SHALL BE PROTECTED FROM EROSION DURING AND AFTER CONSTRUCTION, PARTICULARLY THE STORAGE OF EXCAVATED OR STOCKPILED MATERIAL. THE CONTRACTOR SHALL CAREFULLY STRIP ALL TOPSOIL, LOAM, OR ORGANIC MATTER PRIOR TO TRENCHING OR OTHER OPERATIONS AND SHALL STORE THEM SEPARATELY FROM ALL OTHER MATERIALS DURING EXCAVATION. EACH STOCKPILE MUST BE ADEQUATELY RINGED WITH SEDIMENTATION CONTROL SYSTEM (I.E. HAY BALES AND/OR GEOTEXTILE FENCE). DEBRIS AND OTHER WASTE RESULTING FROM EQUIPMENT MAINTENANCE AND CONSTRUCTION WILL NOT BE DISCARDED ON SITE. STABILIZING OF SLOPES SHALL BE DONE IMMEDIATELY AFTER CONSTRUCTION OF SLOPES. SLOPES STEEPER THAN 4:1 SHALL BE PROTECTED WITH EROSION CONTROL MATTING. THIS MATTING IS MANUFACTURED COMBINATIONS OF MULCH AND NETTING AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALL OTHER AREAS SHALL BE MULCHED WITH HAY OR STRAW AT A RATE OF 2 TO 3 TONS PER ACRE. STRAW OR HAY MULCH MUST BE ANCHORED IMMEDIATELY AFTER SPREADING TO PREVENT WINDBLOWING. THE METHODS RECOMMENDED BY THE "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL" SHALL BE USED FOR THE ANCHORING OF MULCH OR NETTING.

EROSION AND SEDIMENTATION CONTROL PLAN

AN EROSION AND SEDIMENTATION CONTROL PLAN MUST BE SUBMITTED IN WRITING TO THE ENGINEER AND APPROVED BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES.
SEDIMENTATION CONTROL SYSTEM - THE SEDIMENTATION CONTROL SYSTEM SHALL CONSIST OF A GEOTEXTILE BARRIER FENCE. THE SEDIMENTATION CONTROL SYSTEM SHALL BE INSTALLED IMMEDIATELY AFTER A CUT SLOPE HAS BEEN GRADED, BEFORE A FILL SLOPE HAS BEEN CREATED AND AS INDICATED ON THE PLANS. THE SYSTEM IS DESIGNED TO INTERCEPT SILT AND SEDIMENT BEFORE IT REACHES THE WETLANDS OR WATERCOURSES. DEPOSITS OF SEDIMENT AND SILT ARE TO BE PERIODICALLY REMOVED FROM THE UPSTREAM SIDE OF THE FENCE. THIS MATERIAL IS TO BE SPREAD AND STABILIZED IN AREAS NOT SUBJECT TO EROSION, OR IN AREAS WHICH ARE NOT TO BE PAVED OR BUILT ON. THE SEDIMENTATION CONTROL SYSTEM IS TO BE REPLACED AS NECESSARY TO PROVIDE PROPER FILTERING ACTION. THE SYSTEM IS TO REMAIN IN PLACE AND BE MAINTAINED TO INSURE EFFICIENT SILTATION CONTROL UNTIL ALL AREAS ABOVE THE FENCE ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED.

STACKED HAY BALES - HAY OR STRAW BALES USED FOR EROSION CONTROL SHALL BE STACKED AT CATCH BASINS WHERE SEDIMENT MAY ENTER THE CATCH BASIN OR AS DIRECTED BY THE RESIDENT ENGINEER. DEPOSITS OF SEDIMENT AND SILT ARE TO BE PERIODICALLY REMOVED FROM THE UPSTREAM SIDE OF THE EROSION CHECKS. THIS MATERIAL IS TO BE SPREAD AND STABILIZED IN AREAS NOT SUBJECT TO EROSION, OR IN AREAS WHICH ARE NOT TO BE PAVED OR BUILT ON. HAY OR STRAW BALES ARE TO BE REPLACED AS NECESSARY TO PROVIDE PROPER FILTERING ACTION. THE SYSTEM IS TO REMAIN IN PLACE AND BE MAINTAINED TO INSURE EFFICIENT SILTATION CONTROL UNTIL ALL AREAS ABOVE THE EROSION CHECKS ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED.

IN ALL AREAS, REMOVAL OF TREES, BUSHES, AND OTHER VEGETATION, AND DISTURBANCE OF THE SOIL, IS TO BE KEPT TO AN ABSOLUTE MINIMUM WHILE ALLOWING PROPER DEVELOPMENT OF THE SITE.

DURING CONSTRUCTION, AS SMALL AN AREA OF SOIL AS POSSIBLE SHOULD BE EXPOSED FOR AS SHORT A TIME AS POSSIBLE. AFTER CONSTRUCTION, GRADE, RESPREAD TOPSOIL, AND STABILIZE SOIL BY SEEDING AND MULCHING AS TO PREVENT EROSION.

EROSION AND SEDIMENTATION CONTROL MAINTENANCE PROCEDURES

ALL EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSPECTED DURING CONSTRUCTION ON A DAILY BASIS AND FOLLOWING ALL STORMS BY THE RESIDENT ENGINEER. THE CONTRACTOR SHALL MAINTAIN AND MAKE REPAIRS AND REMOVE SEDIMENT AS REQUESTED BY THE RESIDENT ENGINEER. THIS WORK SHALL BE PERFORMED WITHIN 24 HOURS OF THE REQUEST AND THERE SHALL BE NO SEPARATE PAYMENT FOR THIS WORK.

THE CONTRACTOR SHALL CLEAN SEDIMENT AND DEBRIS FROM ALL DRAINAGE STRUCTURES, AND PIPES AT THE COMPLETION OF CONSTRUCTION, AND AS REQUESTED BY THE RESIDENT INSPECTOR TO KEEP THE SYSTEM FUNCTIONING PROPERLY DURING CONSTRUCTION.

FOLLOWING COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL REPAIR ALL ERODED AREAS AND ENSURE A GOOD STAND OF TURF IS ESTABLISHED THROUGHOUT. THE CONTRACTOR SHALL REPAIR ALL ERODED OR DISPLACED RIPRAP, AND CLEAN SEDIMENT COVERED STONES.

ALL APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES SHOULD BE ESTABLISHED PRIOR TO AND BE MAINTAINED THROUGH ALL CONSTRUCTION PHASES.

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REVISIONS

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DESIGN	K.K.
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CHECKED	S.T.A.
DATE	03/26/14

FINAL DESIGN

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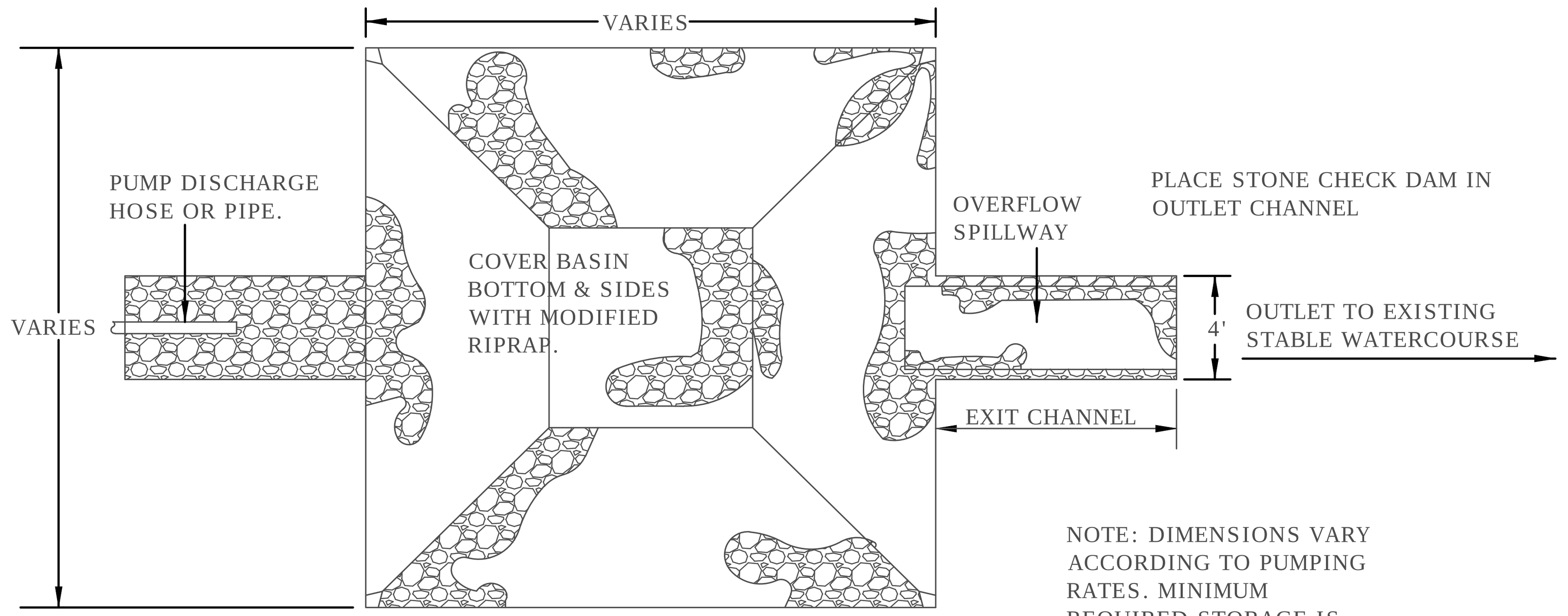
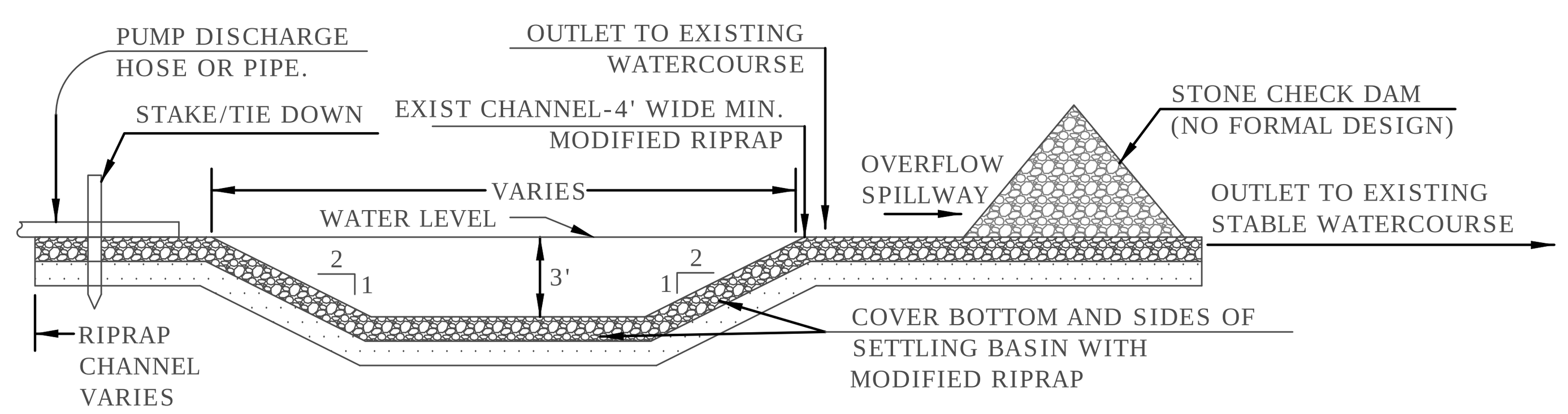
BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
EROSION AND SEDIMENTATION CONTROL DETAILS

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	BASHAN LAKE DAM	FD	12012.1		17	24



NOTE: DIMENSIONS VARY ACCORDING TO PUMPING RATES. MINIMUM REQUIRED STORAGE IS CALCULATED FROM SPILLWAY WEIR.

PLAN VIEW



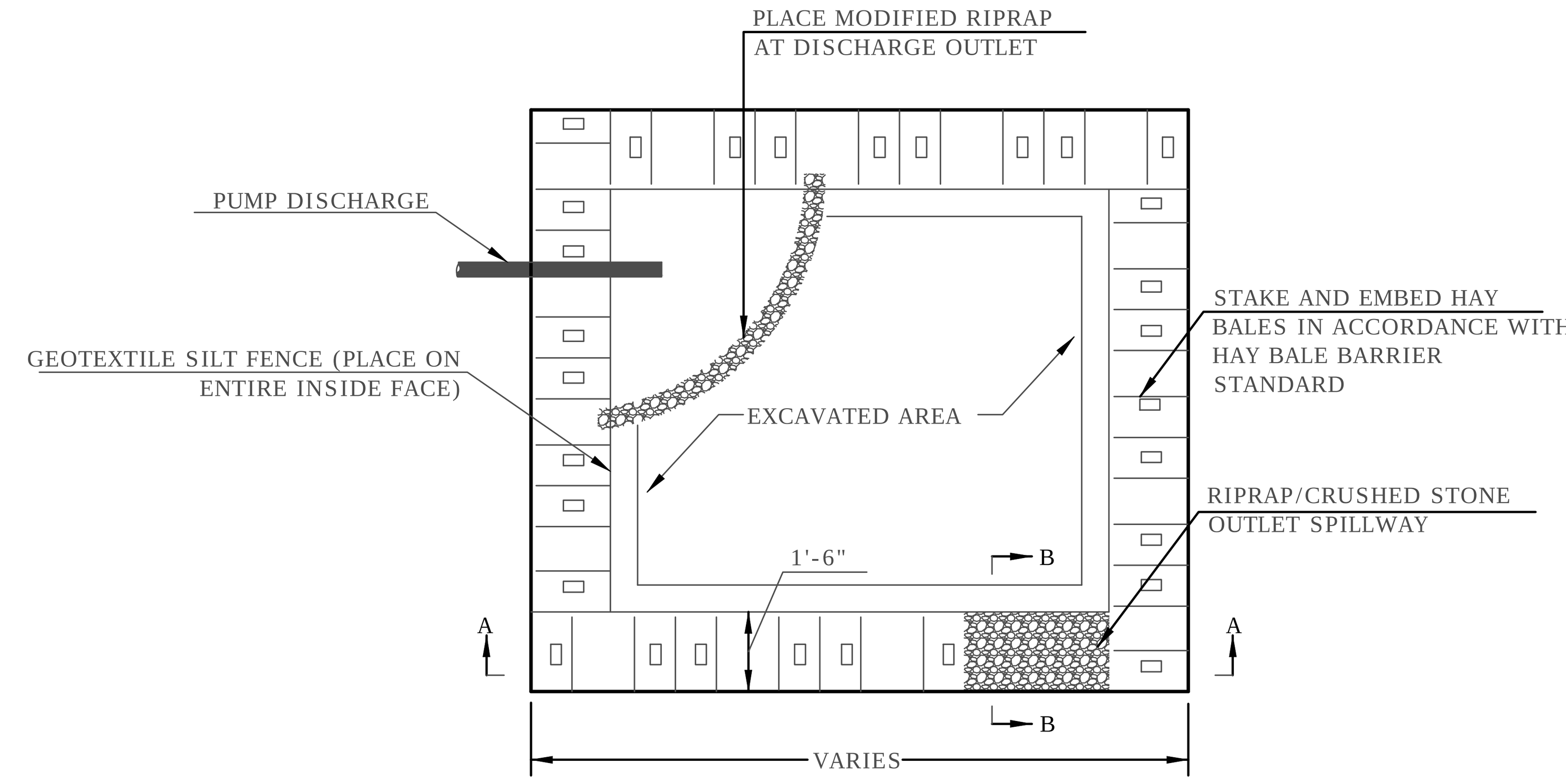
PROFILE

REFER TO PAGE 5-13-7 "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL".

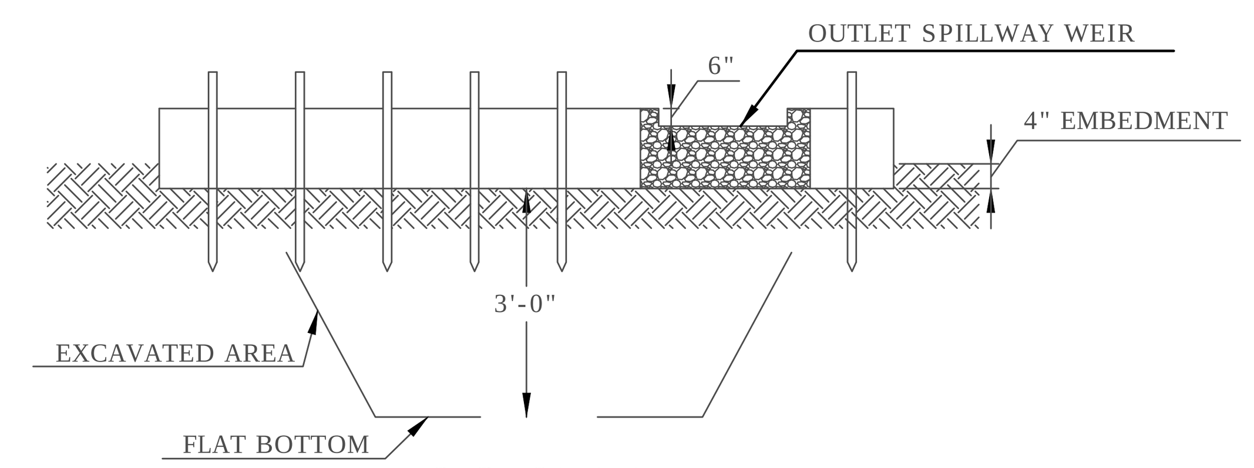
TYPE III PUMPING SETTLING BASIN

N.T.S.

PUMPING SETTLING BASIN NOTES:
1. LOCATION AS DIRECTED BY ENGINEER. REMOVE WHEN PUMPING IS COMPLETED.
2. PUMP DISCHARGE PAD HALL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST THE GENERAL WORK.
3. STORAGE VOLUME BASED UPON PUMP DISCHARGE, LARGER PAD DIMENSIONS MAY BE REQUIRED AS DIRECTED BY THE ENGINEER. (MINIMUM REQUIRED STORAGE, CUBIC FEET) = 16 x (PUMP DISCHARGE RATE, GPM)
4. TYPE II PUMPING SETTLING BASIN TO BE USED WHEN THE EXPECTED DURATION OF USE IS LESS THAN 3 MONTHS. TYPE III PUMPING SETTLING BASIN TO BE USED WHEN THE EXPECTED DURATION OF USE IS LONGER THAN 3 MONTHS.
5. SETTLING BASIN AND EXIT CHANNEL TO BE BACKFILLED AT COMPLETION OF WORK. AREA SHALL BE GRADED AND STABILIZED ACCORDING TO PLANS OR AS DIRECTED BY THE ENGINEER.

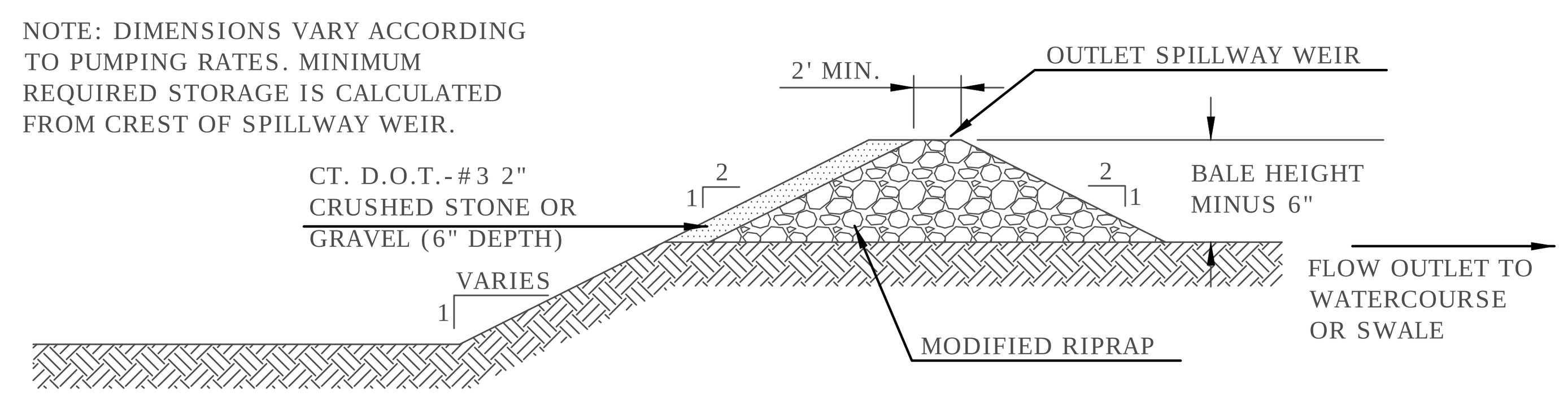


PLAN



SECTION A-A

NOTE: DIMENSIONS VARY ACCORDING TO PUMPING RATES. MINIMUM REQUIRED STORAGE IS CALCULATED FROM CREST OF SPILLWAY WEIR.

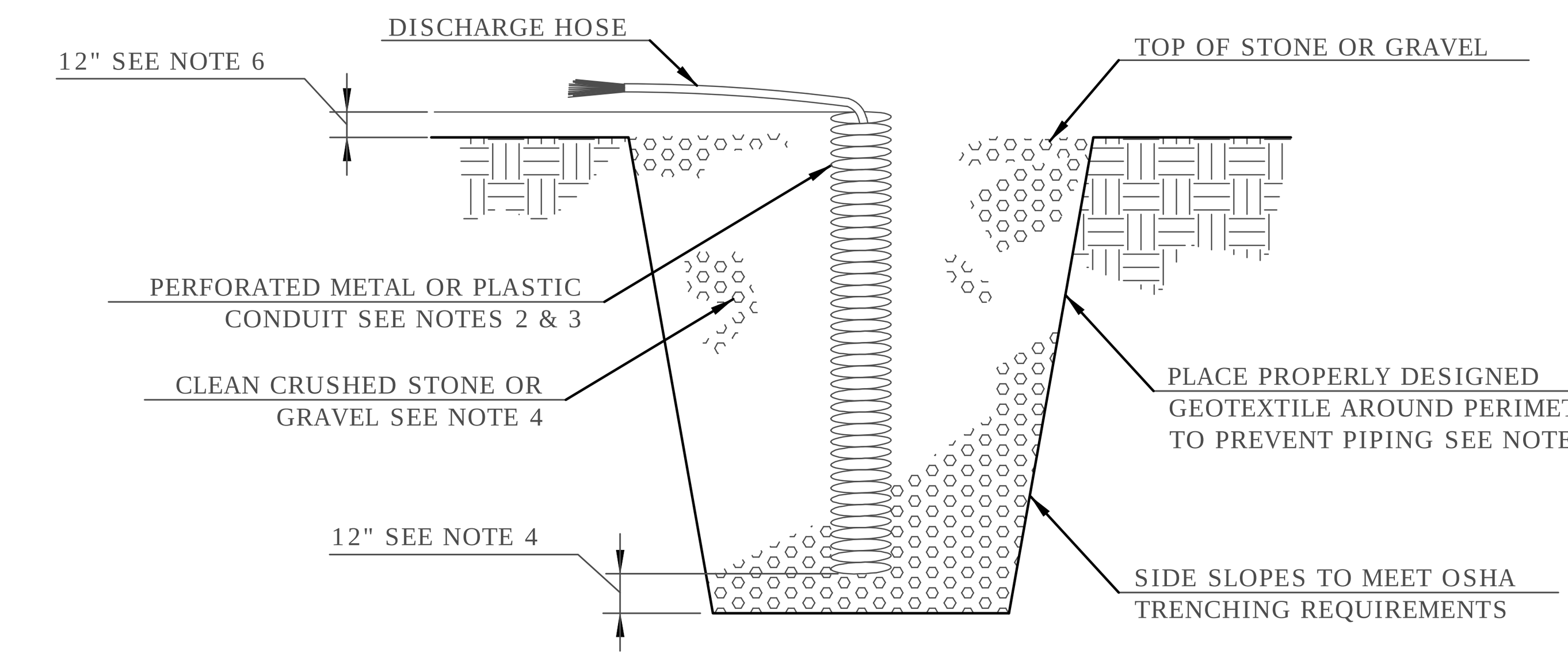


SECTION B-B

REFER TO PAGE 5-13-7 "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL".

TYPE II PUMPING SETTLING BASIN

N.T.S.



REFER TO PAGE 5-13-3 "CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL".

NOTE:

1. OVERALL SUMP PIT DIMENSIONS SHALL BE COMPATIBLE WITH ANTICIPATED SEEPAGE RATES AND PUMP SIZE TO BE USED.

2. THE STANDPIPE DIAMETER AND NUMBER OF PERFORATIONS SHALL BE COMPATIBLE WITH THE PUMP SIZE BEING USED.

3. PERFORATIONS IN THE STANDPIPE SHALL BE EITHER CIRCULAR OR SLOTS. PERFORATION SIZE SHALL NOT EXCEED 1/2" IN DIAMETER.

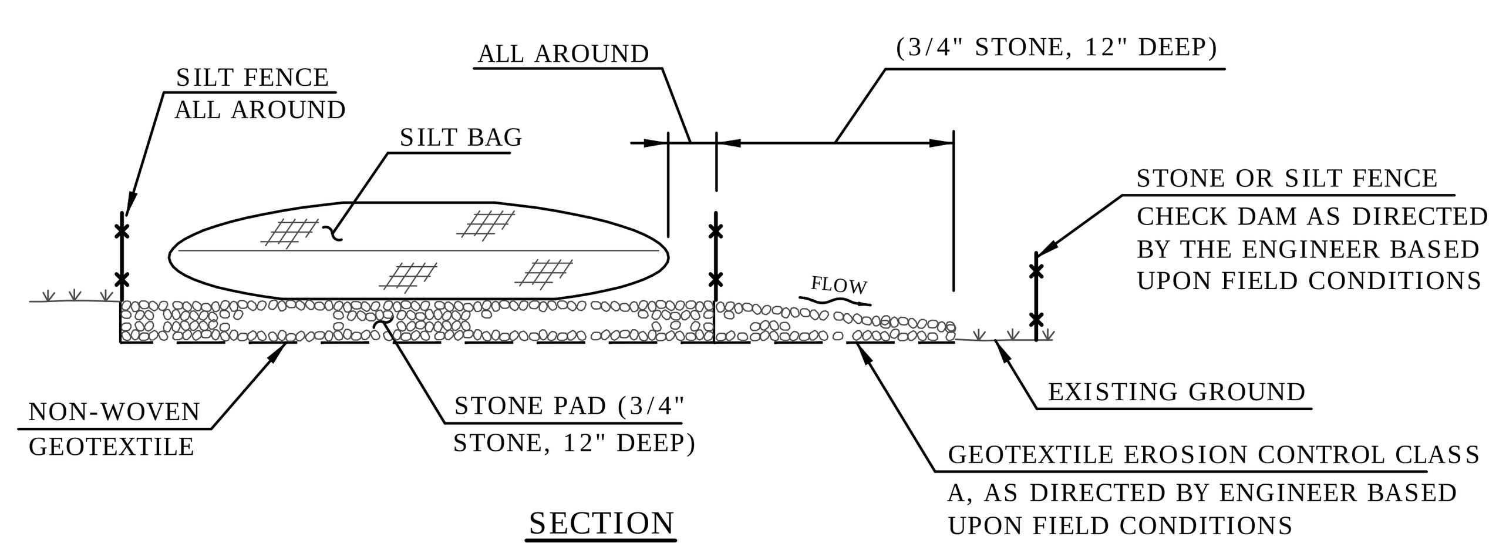
4. CRUSHED STONE OR GRAVEL SHALL BE NO SMALLER THAN CT DOT #8 SIZE NOR LARGER THAN CT DOT #3 SIZE. CRUSHED STONE SHALL EXTEND A MINIMUM OF 12" BELOW THE BOTTOM OF THE STANDPIPE.

5. IF EXCESSIVE MOVEMENT OF FINE SOIL PARTICLES FROM THE SURROUNDING EXISTING SOILS IS ANTICIPATED, A PROPERLY DESIGNED GEOTEXTILE SHALL BE PLACED BETWEEN THE EXISTING SOILS AND THE CRUSHED STONE OR GRAVEL BACKFILL.

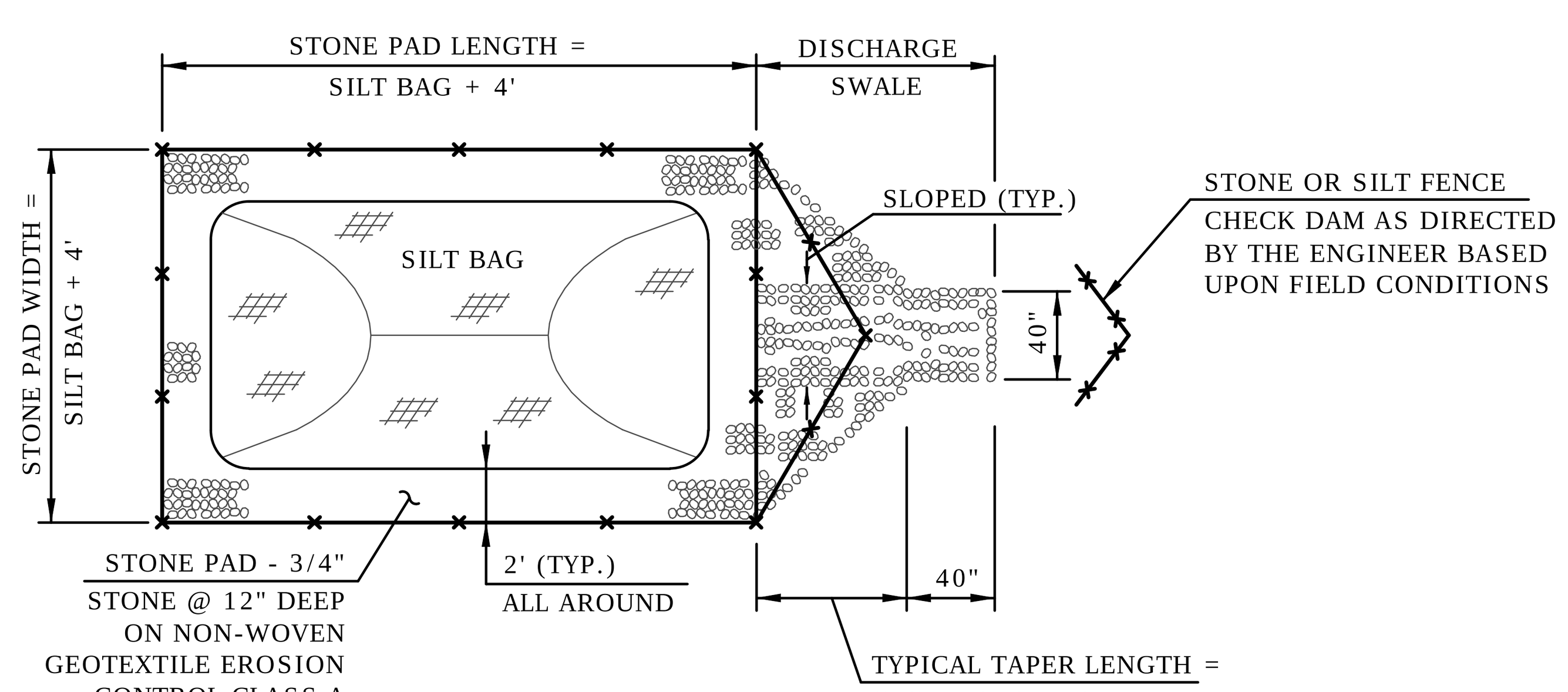
6. THE STANDPIPE SHALL EXTEND A MINIMUM OF 12" ABOVE THE SURROUNDING GROUND.

PUMP INTAKE
TYPICAL SECTION OF SUMP PIT

N.T.S.



SECTION



PLAN

SILT BAG INSTALLATION

N.T.S.

GENERAL

EFFLUENT FROM DEWATERED WORK AREA(S) SHOULD NOT BE DISCHARGED DIRECTLY TO THE WATERCOURSE BUT BE PROCESSED THROUGH TREATMENT STRUCTURE(S). SUCH STRUCTURES SHOULD NOT BE LOCATED WITHIN THE WATERCOURSE OR ADJACENT WETLANDS.

COFFERDAM NOTES

1. A CONSTRUCTION SEQUENCING PLAN AND A WATER HANDLING PLAN INCLUDING A CONTINGENCY PLAN FOR FLOOD EVENTS MUST BE SUBMITTED IN WRITING TO THE ENGINEER AND APPROVED BY THE ENGINEER PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION IN A WATERWAY.

2. TEMPORARY COFFERDAM AND PUMPING NOT PAID SEPARATELY. COST TO BE INCLUDED IN THE PAY ITEM "COFFERDAM AND DEWATERING".

3. WATER HANDLING PLAN IS EXAMPLE ONLY.

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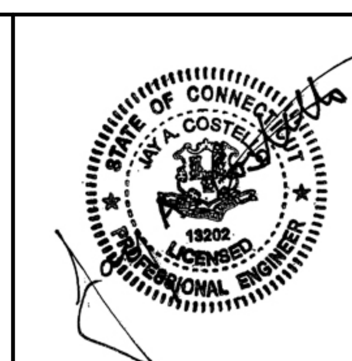

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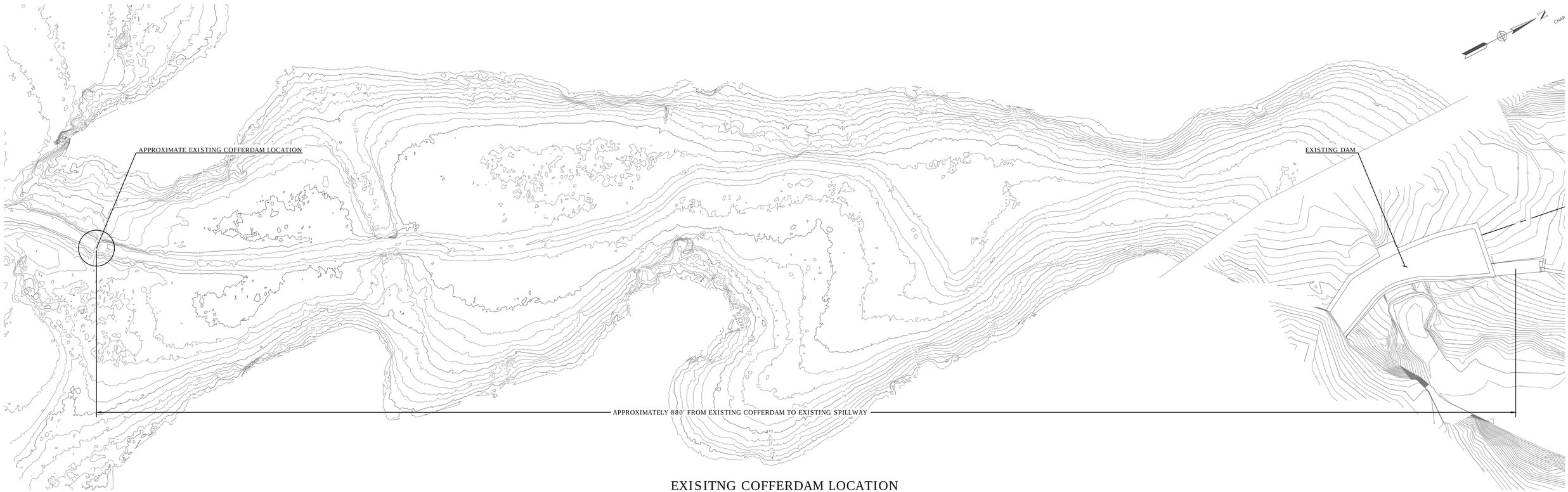
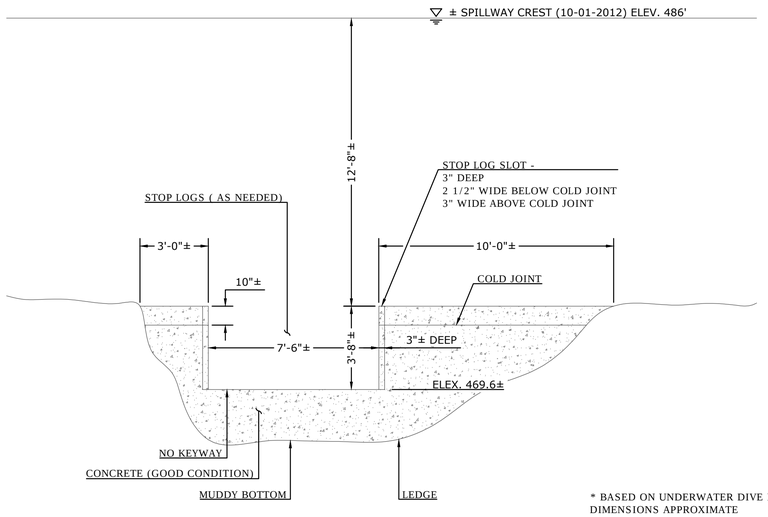
BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
HANDLING WATER DETAILS

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET 18 OF 24
D	BASHAN LAKE DAM	FD	12012.1		



EXISITNG COFFERDAM LOCATION

NOT TO SCALE



* BASED ON UNDERWATER DIVE INSPECTION, DIMENSIONS APPROXIMATE

EXISITNG COFFERDAM*

LOOKING NORTH (TOWARDS DAM)

NOT TO SCALE

WATER HANDLING NARRATIVE:

1. THE CONTRACTOR'S OPERATIONS SHALL BE STAGED AND UNDERTAKEN TO MINIMIZE DAMAGES TO EXISTING DAM COMPONENTS WHICH WILL REMAIN IN PLACE AFTER CONSTRUCTION IS COMPLETED. SUCH COMPONENTS INCLUDE EMBANKMENT WALLS, A MAJORITY OF THE RIGHT EMBANKMENT, THE LOW LEVEL OUTLET CONDUIT, SPILLWAY, FENCE POSTS, ETC. THE CONTRACTOR SHALL AVOID OPERATING HEAVY MACHINERY OVER SUCH COMPONENTS TO MINIMIZE DAMAGES (EG, NO CONCRETE MIXERS DRIVEN ON TOP OF THE RIGHT EMBANKMENT CREST OR DIRECTLY OVER THE SPILLWAY). ANY DAMAGES CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AS DIRECTED BY THE ENGINEER.
2. BEGIN THE LAKE DRAWDOWN THE DAY AFTER LABOR DAY. IT IS ESTIMATED THAT THE SLUICE GATE WILL NEED TO BE FULLY OPENED TO ACCOMPLISH THE DESIRED DRAWDOWN IN A TIMELY SCHEDULE. CONTINUALLY MONITOR THE DOWNSTREAM CHANNEL TO MOODUS RESERVOIR AS WELL AS THE BASHAN ROAD BRIDGE FOR EROSION AND FLOODING, ADJUSTING THE SLUICE GATE AS NEEDED TO ELIMINATE ANY ROADWAY FLOODING, BRIDGE DAMAGE OR NOTABLE EROSION. ANY DOWNSTREAM DAMAGES CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AS DIRECTED BY THE ENGINEER.
3. INSTALL AND MAINTAIN EFFECTIVE EROSION AND SEDIMENTATION CONTROLS, INCLUDING STABILIZED CONSTRUCTION ENTRANCES, IN ACCORDANCE WITH THE CONTRACTOR'S APPROVED PLAN AND THE CONTRACT DOCUMENTS, OR AS DIRECTED BY THE ENGINEER.
4. DRAW DOWN THE LAKE TO THE INVERT (APPROXIMATELY ELEVATION 469.6 FEET) OF THE EXISTING CONCRETE COFFERDAM LOCATED BETWEEN THE TWO ISLANDS AT THE MOUTH OF THE NORTHERLY COVE, APPROXIMATELY 880 FEET SOUTH OF THE DAM SPILLWAY. THEN INSTALL WOODEN STOP LOGS TO THE TOP OF THE COFFERDAM (APPROXIMATELY ELEVATION 473.3 FEET) USING THE EXISTING STOP LOG SLOTS.
5. BEGIN LOWEST ELEVATION DAM WORK INCLUDING REMOVING THE EXISTING GATE STRUCTURE, INSTALLING THE NEW GATE STRUCTURE, INSTALLING NEW SLUICE GATE, REMOVING THE EXISTING WOODEN SPILLWAY BRIDGE, POURING THE CONCRETE CUTOFF WALL ALONG BOTH THE UPSTREAM RIGHT EMBANKMENT WALL AND RIGHT SPILLWAY TRAINING WALL, CONSTRUCTION OF THE SOUTH BRIDGE ABUTMENT, ETC. IT IS ANTICIPATED THAT SOME PUMPING MAY BE REQUIRED TO HANDLE LOCALIZED DRAINAGE AND AREAS OF PONDING FOR THE LOWEST ELEVATION WORK, SUCH AS REMOVING/INSTALLING THE GATE STRUCTURE FOOTING, ETC.
6. BEGIN BOAT LAUNCH WORK INCLUDING CHANNEL DREDGING, INSTALLATION OF NEW BOAT RAMP, PLACEMENT OF PRECAST CONCRETE BLOCKS, CONSTRUCTION OF BULKHEAD, RIPRAP INSTALLATION, ETC. IN ORDER TO ACCOMPLISH THIS WORK, IT IS ANTICIPATED THAT THE INSTALLATION OF SANDBAG COFFERDAMS AND SOME PUMPING MAY BE REQUIRED TO HANDLE INCOMING FLOWS FROM THE MINOR TRIBUTARY FROM THE SOUTH.
7. COMPLETELY CLOSE THE NEW LOW LEVEL OUTLET AT THE DAM BY FEBRUARY 1. AFTER THE GATE IS CLOSED, IT IS ANTICIPATED THAT SOME PUMPING MAY BE NEEDED IN THE AREA OF THE DAM TO COMPLETE ANY REMAINING LOW ELEVATION WORK. HIGHER ELEVATION WORK MAY NOT REQUIRE ANY PUMPING TO ACCOMPLISH SUCH WORK.
8. VIDEO INSPECT THE LOW LEVEL OUTLET CONDUIT FOR ANY DAMAGES WHICH MAY HAVE OCCURRED DURING DRAWDOWN OPERATIONS.
9. COMPLETE REMAINING WORK AT BOAT LAUNCH INCLUDING INSTALLATION OF BULKHEAD SIDEWALK, POUR CONCRETE PAD FOR PORTABLE TOILET, PAVE PORTION OF PARKING AREA, REGRADE GRAVEL SECTION OF PARKING AREA, ETC. ONCE ALL PROPOSED WORK IS COMPLETE AND ACCEPTED AT THE BOAT LAUNCH SITE, COMPLETE FINAL SITE CLEANUP AND STABILIZATION.
10. COMPLETE REMAINING WORK ALONG THE RIGHT DAM EMBANKMENT INCLUDING CLEARING AND GRUBBING, INSTALLING THE DOWNSTREAM CONCRETE BUTTRESS, RAISING THE EMBANKMENT CREST ELEVATION, MASONRY REPAIRS, INSTALLATION OF FENCING, ETC.
11. COMPLETE RECONSTRUCTION OF LEFT EMBANKMENT INCLUDING CLEARING AND GRUBBING, INSTALLATION OF NEW CONCRETE SPILLWAY TRAINING WALL, CONSTRUCTION OF NORTH BRIDGE ABUTMENT, LEFT EMBANKMENT FILL, MASONRY REPAIRS, ETC.
12. COMPLETE SPILLWAY REPAIRS INCLUDING CONCRETE CUTOFF WALL, CONCRETE CAP, IMPERVIOUS FILL, RIPRAP PLACEMENT, ETC.
13. INSTALL NEW MAINTENANCE ACCESS BRIDGE.
14. COMPLETE ANY REMAINING CLEARING AND GRUBBING.
15. COMPLETE REMAINING FENCE WORK.
16. ONCE ALL PROPOSED WORK IS COMPLETE AND ACCEPTED AT THE DAM SITE, COMPLETE FINAL SITE CLEANUP AND STABILIZATION, INCLUDING REMOVING STABILIZED CONSTRUCTION ENTRANCE AND DRIVEWAY WORK.

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NO.	DATE	DESCRIPTION

REVISIONS

SUPV.	J.A.C.
DESIGN	K.K.
DRAWN	M.D.C.
CHECKED	S.T.A.
DATE	03/26/14

FINAL DESIGN

STATE OF CONNECTICUT · JOHN A. COSTELLO · 12008 · REGISTERED PROFESSIONAL ENGINEER

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STATE OF CONNECTICUT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
HANDLING WATER PLAN

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	BASHAN LAKE DAM	FD	12012.1		19	24


NOTES
REF MAP
PLAN MADE FOR STATE OF CONNECTICUT DEPARTMENT OF AGRICULTURE AND NATURAL RESOURCES SHOWING DAM SITE AT BASHAN LAKE IN THE TOWN OF EAST HADDAM
SCALE 1"=20'" 5-25-1967 CHANDLER AND PALMER SHEET 2 OF 2
SITE BM ELEV=390.43
HORZ. DATUM ASSUMED
N
CHAIN LINK FENCE
N73°00'00"E
302.09'
N 5165.44
E 4993.88
TOP OF CONCRETE MON, ELEV=491.5
ELEV BASED ON BASHAN LAKE DAM DATUM FROM ABOVE MAP REFERENCE
DREDGE BOTTOM OF CHANNEL WORK TO BE FROM THE BANK OF THE RIVER
LARGE ROCKS LINE BANK
TO BASHAN LAKE
LARGE ROCKS LINE BANK
BOLT IN LEDGE
FULL POOL LIMIT ELEV. 486'±
6.5' LONG CAST-IN-PLACE RETURN WALL
12" MODIFIED RIPRAP
PRECAST CONCRETE BULKHEAD
CONCRETE SIDEWALK 1% SLOPE TO LAKE
PROPOSED PRECAST CONCRETE INTERLOCKING BLOCKS
PROPOSED PRECAST CONCRETE PANEL
RETURN WALL N 5004.75 E 4768.12
BULKHEAD N 5019.37 E 4815.68
SIDEWALK N 5025.47 E 4817.27
PROPOSED STEEL BOLLARD
PROPOSED CAST-IN-PLACE ANCHOR WALL
TEMPORARY SEDIMENTATION CONTROL SYSTEM (TYP.)
4 - 20' PRECAST CONCRETE BARRIER CURBS
18' X 9' CAR PARKING SPACES (TYP.)
DIRECTION ARROW SIGN POINTING LEFT
36" X 12" SIGN "ONE WAY (RIGHT ARROW)"
TEMPORARY PRECAST CONCRETE BARRIER CURB (TYP.) TO BE REMOVED AFTER CONSTRUCTION
TEMPORARY TYPE III CONSTRUCTION BARRICADE (TYP.) TO BE REMOVED AFTER CONSTRUCTION
15'-0"
GRASS
TREELINE
0+00
1+00
2+00
3+00
3+06
BEGIN = 0+00
END = 3+05.57
BEGIN PAVEMENT STATION 1+00.00 N 5004.59 E 4826.08
END PAVEMENT BEGIN GRAVEL PARKING LOT STATION 1+70.00 N 5031.78 E 4890.57
END GRAVEL PARKING LOT STATION 2+94.08 N 5079.98 E 5004.90
GRAVEL PARKING
ROCKS
SIGN
WOOD RAIL
REMOVE BOULDERS (TYP.)
TEMPORARY COFFERDAM TO BE REMOVED AFTER CONSTRUCTION (TYP.) SEE HANDLING WATER NOTES ON SHEET 19 OF 24
12' X 12' CONCRETE PAD
PROPOSED STEEL BOLLARDS
RELOCATED WOOD RAIL
ADA 15' X 45' TRAILER PARKING SPACE
10' X 45' TRAILER PARKING SPACES (TYP.)
CURB STOPS (TYP.)
18' X 9' CAR PARKING SPACE
SF

BOAT LAUNCH PLAN

SCALE: 1' = 10'-0"

NOTES:

1. THE CONTRACTOR SHALL PLACE TWO(2) "BOAT LAUNCH CLOSED" SIGNS 60" X 10" AND TWO(2) "NO THRU TRAFFIC" SIGNS 60" X 10" AT THE INTERSECTION OF BALLAHACK ROAD NO. 1 AND ROUTE 434; ONE FOR EACH DIRECTION OF TRAFFIC ON ROUTE 434.
2. THE CONTRACTOR SHALL ALSO PLACE A "BOAT LAUNCH CLOSED" SIGN 60" X 10" ON BALLAHACK ROAD NO.1, 50 FEET PRIOR TO THE INTERSECTION OF WHITEWOOD DR.

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DESIGN	K.K.
DRAWN	M.D.C.
CHECKED	K.O.E.
DATE	03/26/14

FINAL DESIGN

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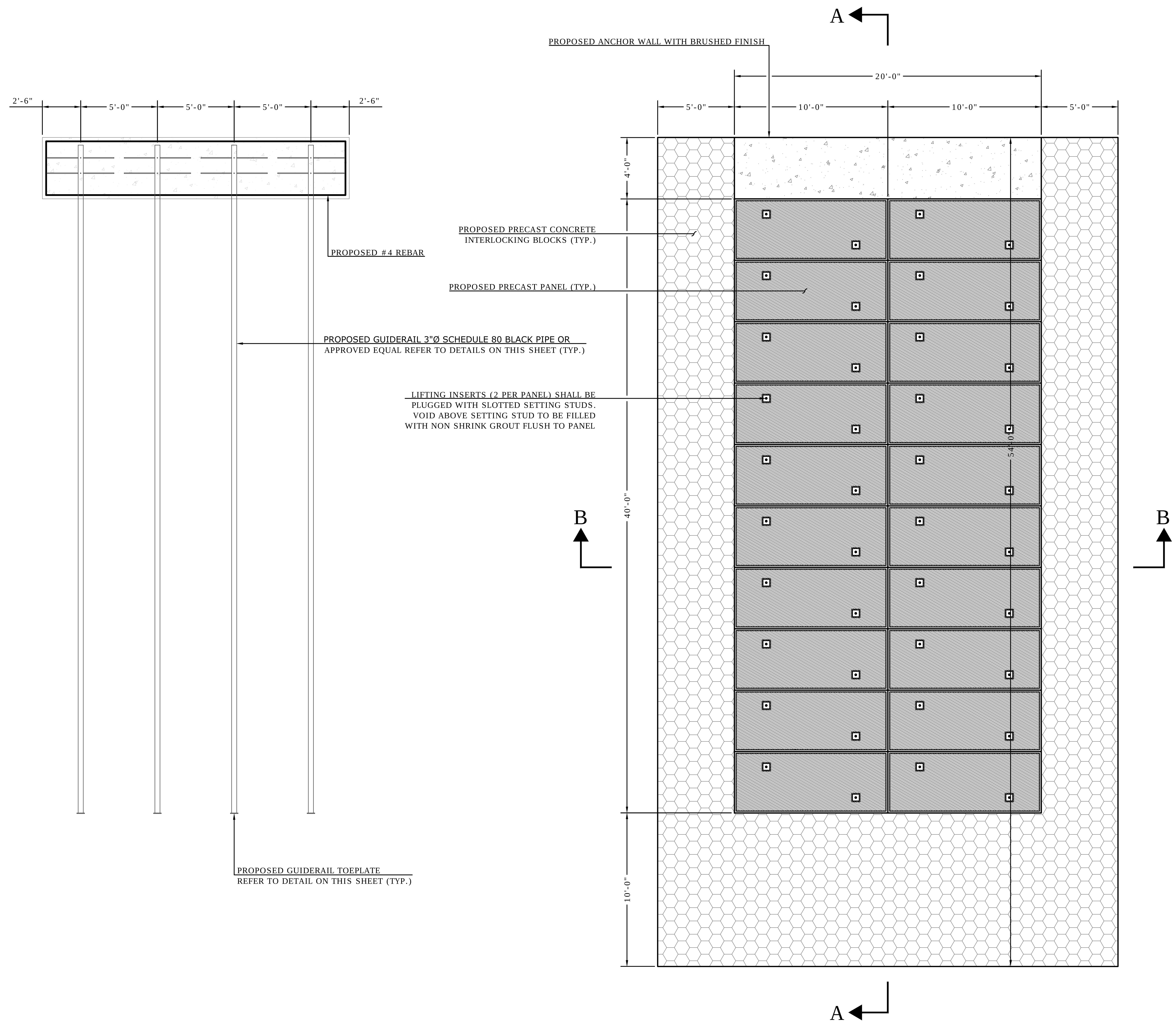
HARTFORD, CONNECTICUT 06106

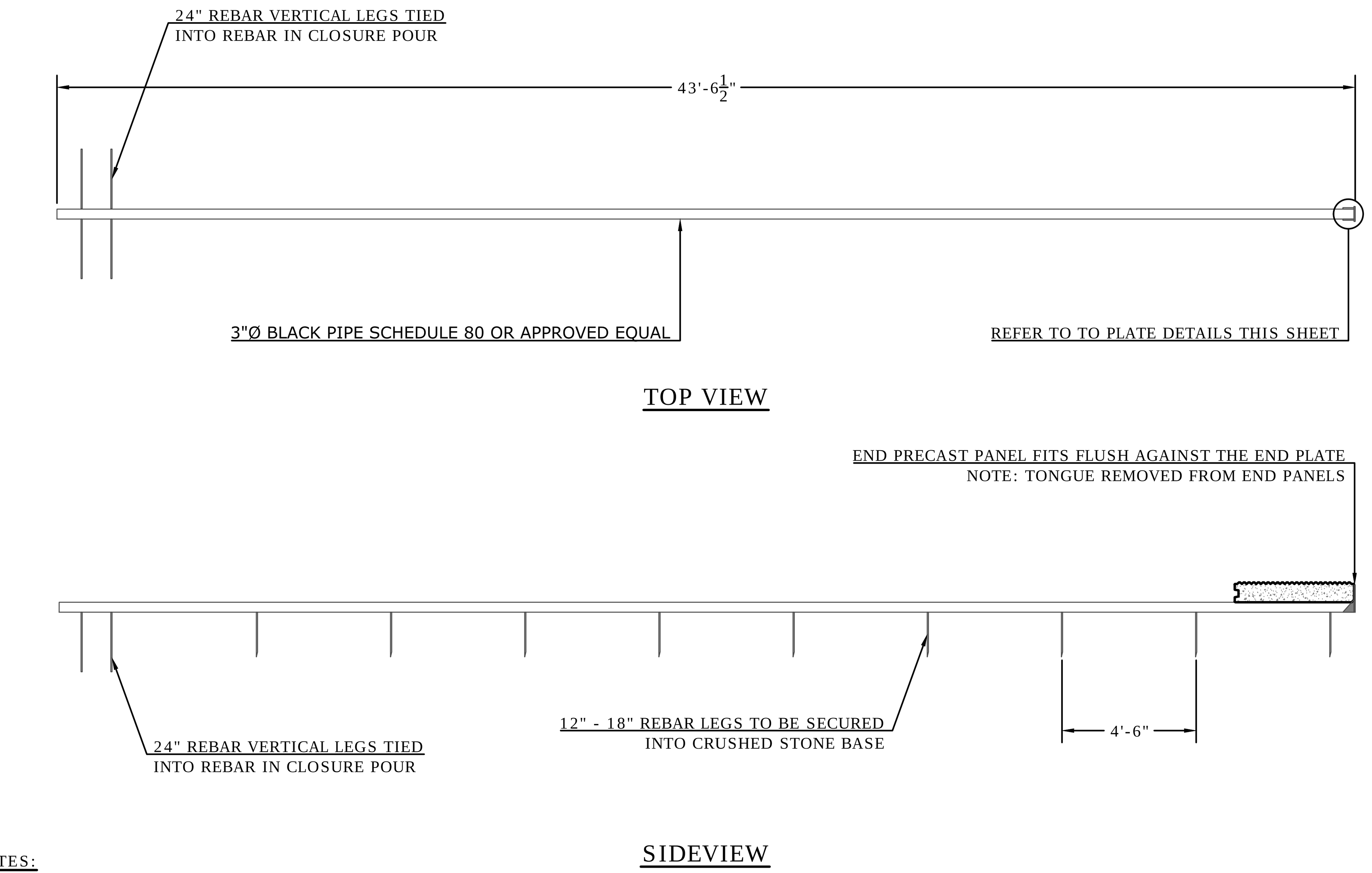
BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
BOAT LAUNCH PLAN - MITIGATION SITE

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET 20 OF 24
D	BASHAN LAKE DAM	FD	12012.1		



PLAN VIEW

SCALE: 1' = 10'-0"



NOTES:

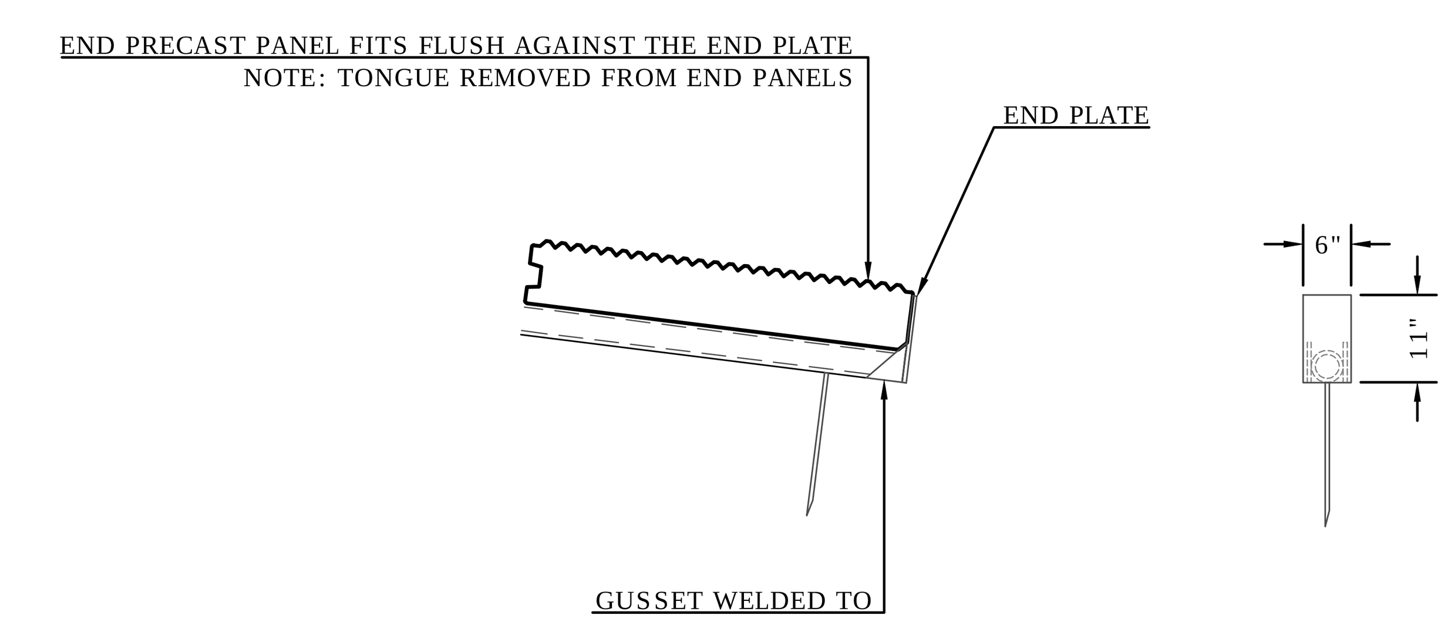
3"Ø BLACK PIPE SCHEDULE 80 OR APPROVED EQUAL

ALL REBAR SHALL BE #5 DEFORMED STEEL

TOE PLATE FABRICATED WITH 1/2" THICK STEEL WELDED
TO 3"Ø SCHEDULE 80 BLACK PIPE OR APPROVED EQUAL

GUIDERAIL SYSTEM

NOT TO SCALE



NOTES:

TOE PLATE FABRICATED WITH 1/2" THICK STEEL
WELDED TO 3"Ø SCHEDULE 80 BLACK PIPE OF APPROVED EQUAL

SIDEVIEW

END VIEW

TOE PLATE DETAIL

NOT TO SCALE

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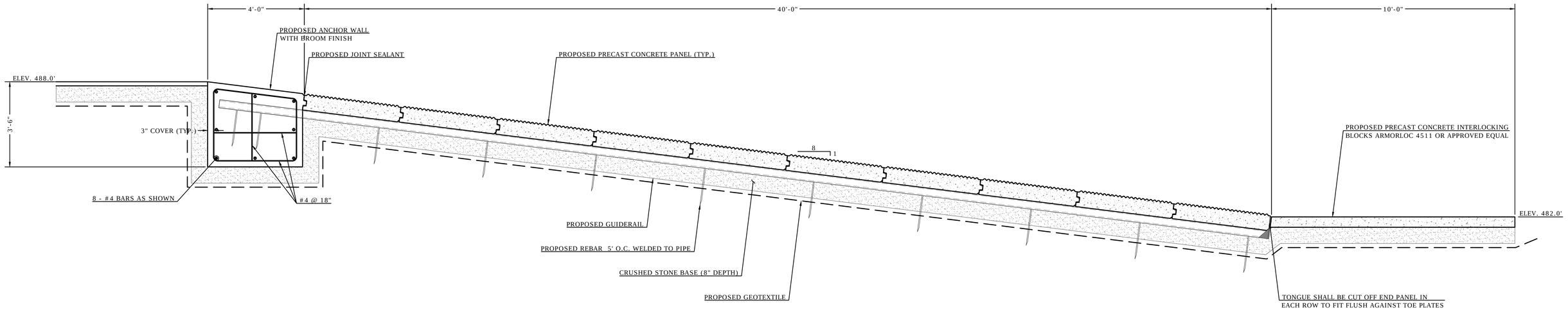
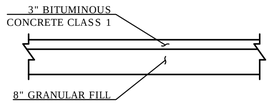
BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
BOAT LAUNCH DETAILS 1 OF 4
MITIGATION SITE

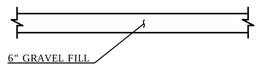
SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET 21 OF 24
D	BASHAN LAKE DAM	FD	12012.1		



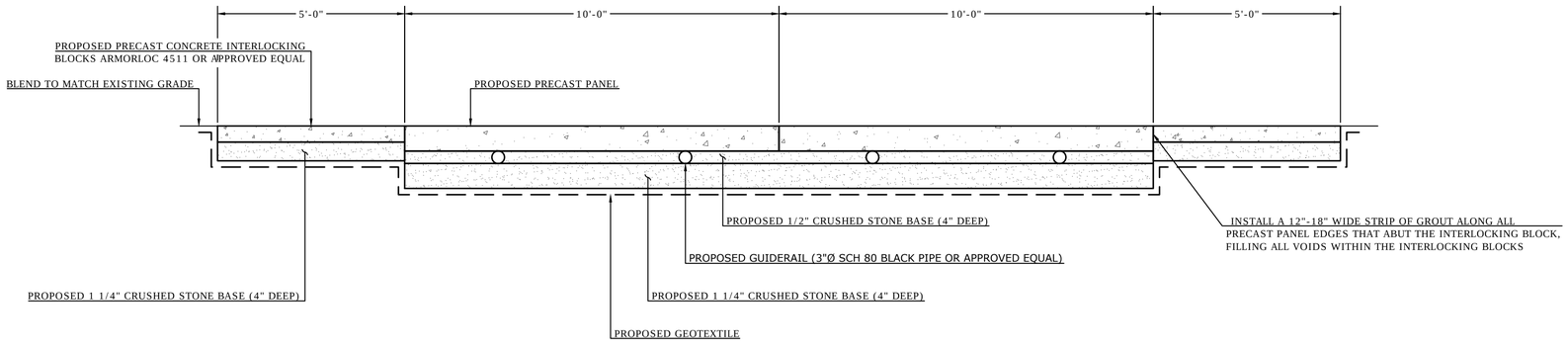
SECTION A-A
SCALE: 1' = 2'-0"



PARKING LOT
PAVEMENT SECTION
SCALE: 1' = 2'-0"



PARKING LOT
GRAVEL SECTION
SCALE: 1' = 2'-0"



SECTION B-B
SCALE: 1' = 2'-0"

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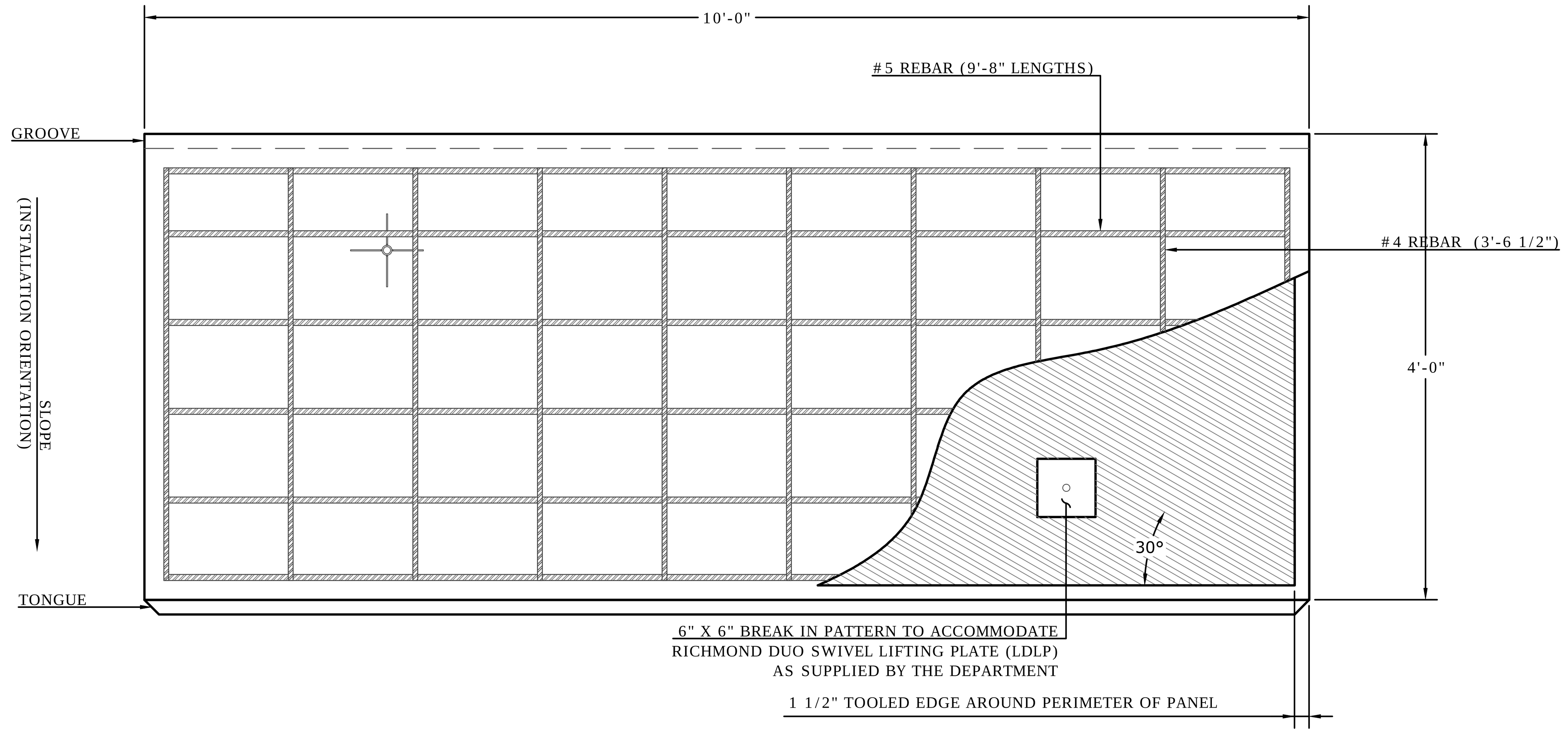
HARTFORD, CONNECTICUT 06106

BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
BOAT LAUNCH DETAILS 2 OF 4
MITIGATION SITE

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	OF
D	BASHAN LAKE DAM	FD	12012.1		22	24



NOTES:

30° V-GROVE PATTERN SHALL BE ALIGNED IN EACH FORM SO THAT THE PATTERN IS CONTINUOUS FROM PANEL TO PANEL ON ALL SIDES

2" MINIMUM REINFORCEMENT COVER ON ALL SIDES

ROUNDED EDGES NOT SHOWN IN THIS VIEW (REFER TO TONGUE & GROOVE DETAIL)

PLAN VIEW

SCALE: 1"=1'-0"

REINFORCED CONCRETE SPECIFICATION

A. CONCRETE SHALL MEET OR EXCEED THE FOLLOWING:
1. COMPRESSIVE-STREGTH: f'c > 5000psi @ 28 DAYS
2. WATER/CEMENT RATIO (BY WEIGHT): 0.38 MAXIMUM
3. SLUMP: 3 INCH MAXIMUM
NOTE: WHERE USE OF SUPERPLASTICIZERS ARE APPROVED TO PRODUCE FLOWING CONCRETE, THE ABOVE REQUIREMENT DOES NOT APPLY
4. PORTLAND CEMENT (ASTM C150): TYPE II, MINIMUM 658 LBS/CY
NOTE: ON BRAND OF CEMENT SHALL BE USED THROUGHOUT THE PROJECT
5. COARSE AGGREGATE (ASTM C33/DOT FORM 816): 1/2" (NO. 67): MAXIMUM
6. FINE AGGREGATE (ASTM C33/DOT 816)
7. WATER (ASTM C94) PORTABLE, CLEAN AND NOT DETRIMENTAL TO CONCRETE
8. ADMIXTURES:
a. AIR ENTRAINMENT (ASTM C260 NON-CHLORIDE): 7% ±1%
b. CHEMICAL ADMIXTURES (ASTM C494-NON CHLORIDE): AS REQUIRED TO PROVIDE CONCRETE OF THE DESIRED QUALITY ON SITE.

NOTES:
SELF-CONSOLIDATING CONCRETE (SCC) DESIGN MIX CAN BE SUBMITTED FOR APPROVAL.

ALL ADMIXTURES USED THROUGHOUT THE PROJECT SHALL BE FROM ONE MANUFACTURER.

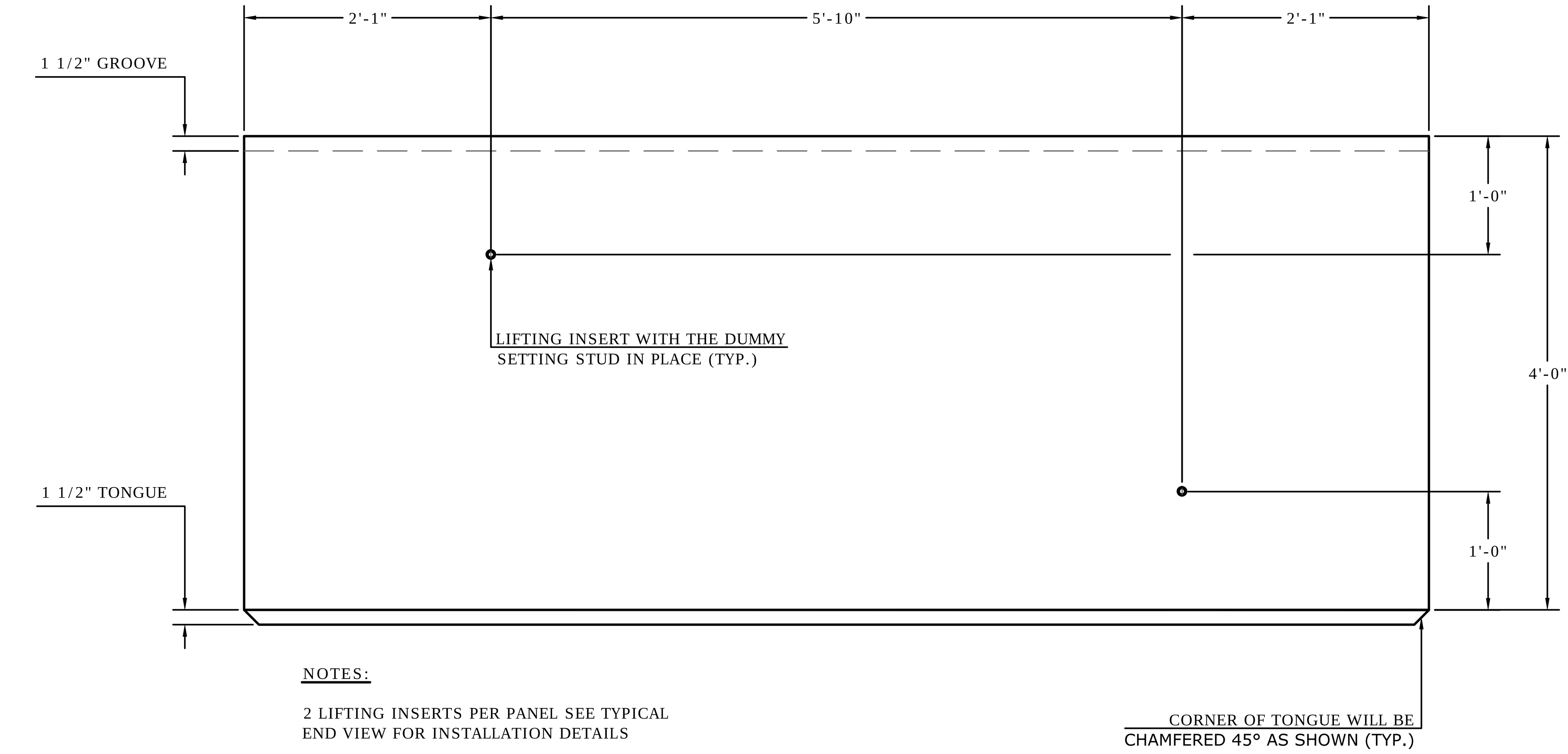
B. REINFORCEMENT:
ALL REINFORCEMENT STEEL SHALL BE ASTM A615, GRADE 60

ALL REINFORCEMENT STEEL SHALL BE EPOXY COATED AFTER FABRICATION IN ACCORDANCE WITH ASTM A775

C. FINISH:
PATTERN IS BROKEN TO ACCOMMODATE THE DAYTON/ RICHMOND DOUBLE SWIVEL LIFTING PLATES

D. THE LIFTING INSERTS (SUPPLIED BY THE CONTRACTOR) MUST BE COMPATIBLE WITH DAYTON/RICHMOND DOUBLE SWIVEL LIFTING PLATES AND 3/4"Ø X 5 1/2" LONG LIFT LAGS HELD IN STOCK BY DEEP

E. ALL CONCRETE COMPONENTS SHALL BE FROM CONNECTICUT DEPARTMENT OF TRANSPORTATION APPROVED MANUFACTURERS AND/OR SOURCES.



NOTES:

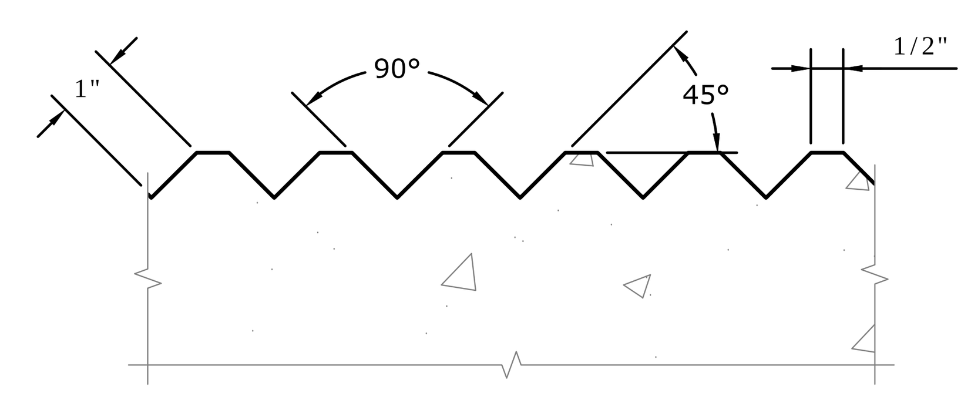
2 LIFTING INSERTS PER PANEL SEE TYPICAL END VIEW FOR INSTALLATION DETAILS

LIFTING INSERTS SHALL BE STAINLESS STEEL

ROUNDED EDGES NOT SHOW IN THIS VIEW

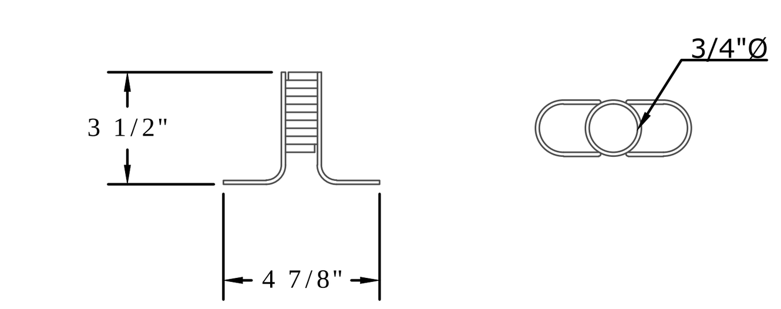
LIFTING INSERT LOCATION

SCALE: 1"=1'-0"



SURFACE GROVE DETAIL

NOT TO SCALE



SIDE VIEW TOP VIEW

LIFTING INSERT

NOT TO SCALE

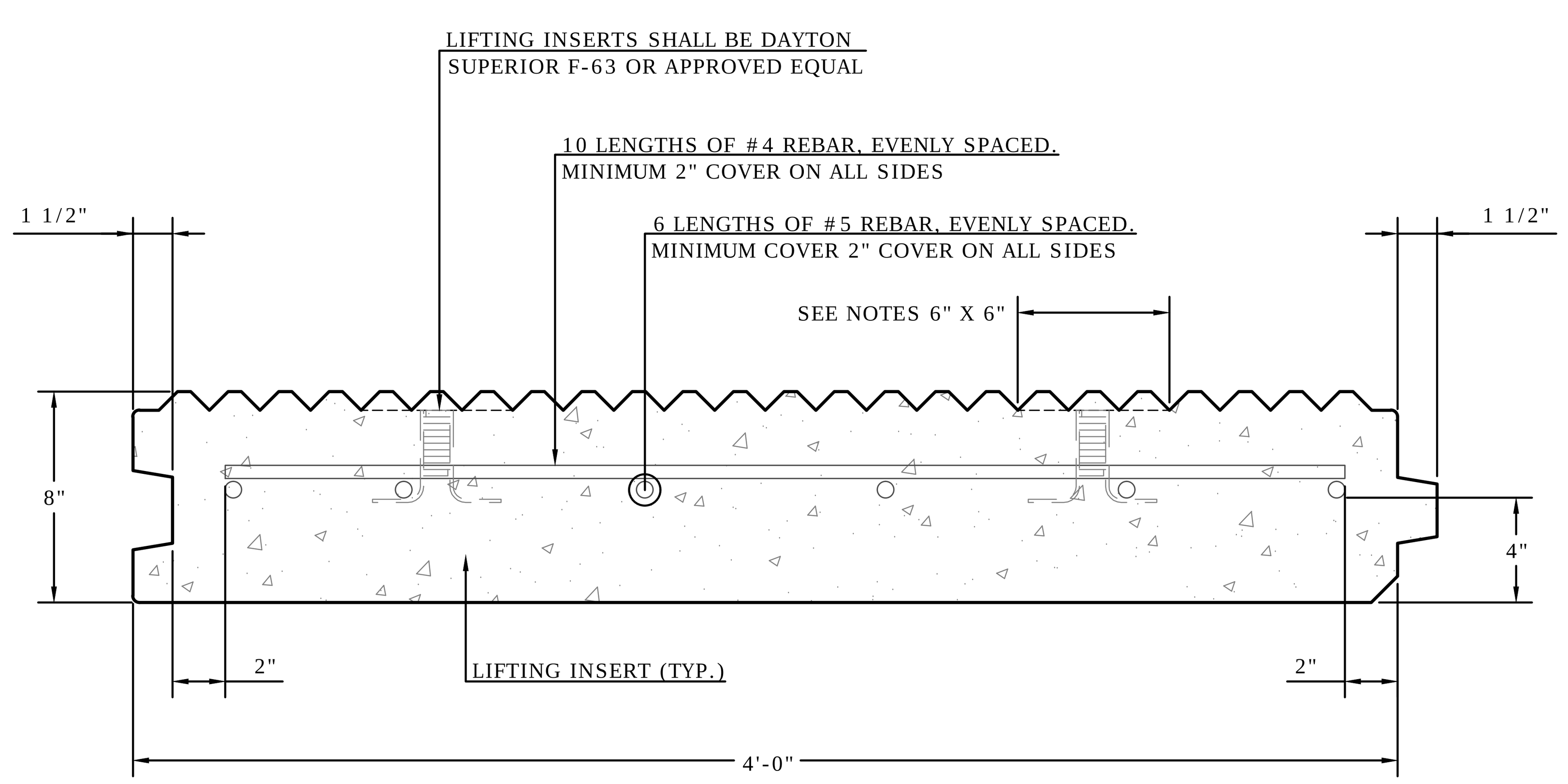
NOTES:

LIFTING INSERTS SHALL BE DAYTON SUPERIOR F-63 OR APPROVED EQUAL.

LIFTING INSERTS SHALL BE STAINLESS STEEL COIL LIFTING INSERTS.

EACH INSERT SHALL HAVE A SAFE WORKING LOAD IN TENSION OF ≥ 2000 POUNDS AND HAVE A FACTOR OF SAFETY 4 TO 1.

THE LIFTING INSERT MUST ACCEPT 3/4"Ø X 5-1/2" LIFT LAG BOLT AND BE COMPATIBLE WITH THE DAYTON/RICHMOND DOUBLE SWIVEL LIFTING PLATES.



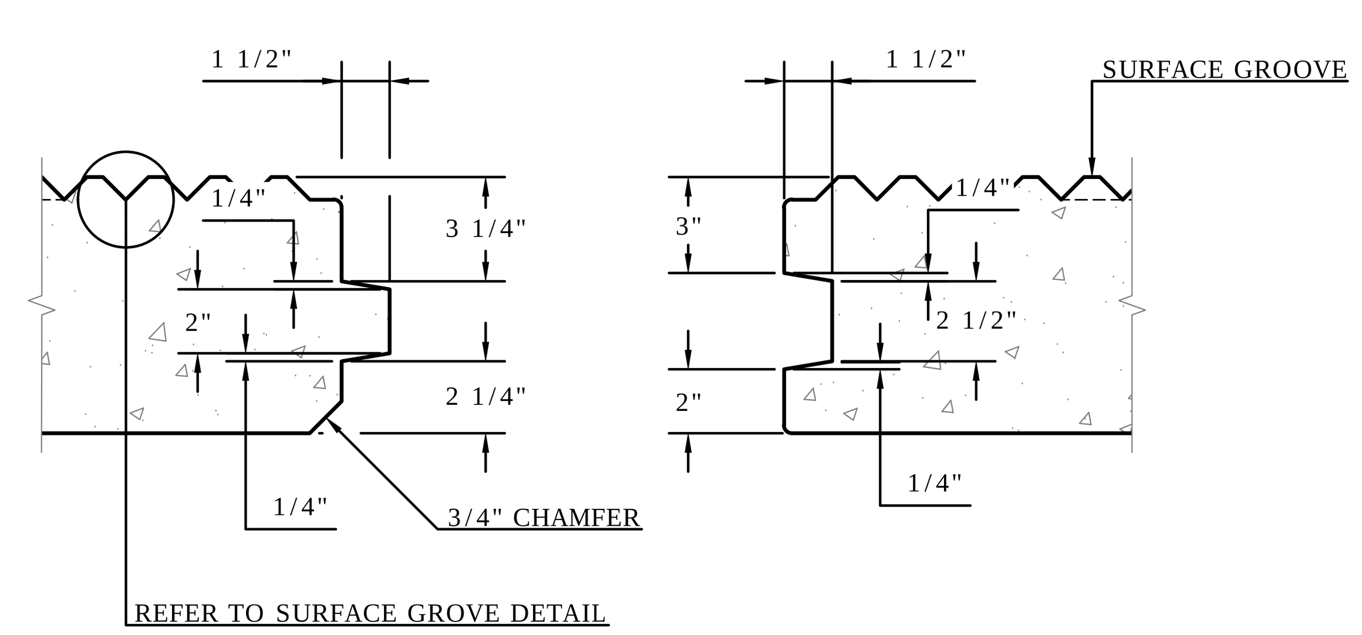
TYPICAL END VIEW

SCALE 1/2" = 1'-0"

NOTES:

PATTERN IS BROKEN TO ACCOMMODATE LIFTING APPARATUS AS SHOWN IN PLAN VIEW

COILS OF THE INSERTS SHALL NOT EXTENDED ABOVE THE CONCRETE SURFACE (AS SHOWN)



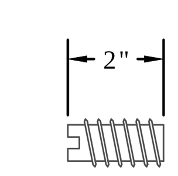
TYPICAL TONGUE AND GROOVE DETAIL

SCALE 1/2" = 1'-0"

NOTES:

1 1/2" EDGE, ROUNDED AT ALL TOP SURFACE EDGES, AS SHOWN

ROUNDED EDGES SHALL HAVE A RADIUS NO GREATER THAN A 1/4"



SLOTTED SETTING PLUG

NOT TO SCALE

NOTES:

SUPPLY TWO (2) PLASTIC SLOTTED SETTING PLUGS PER PANEL COMPATIBLE WITH THE APPROVED LIFTING INSERTS.

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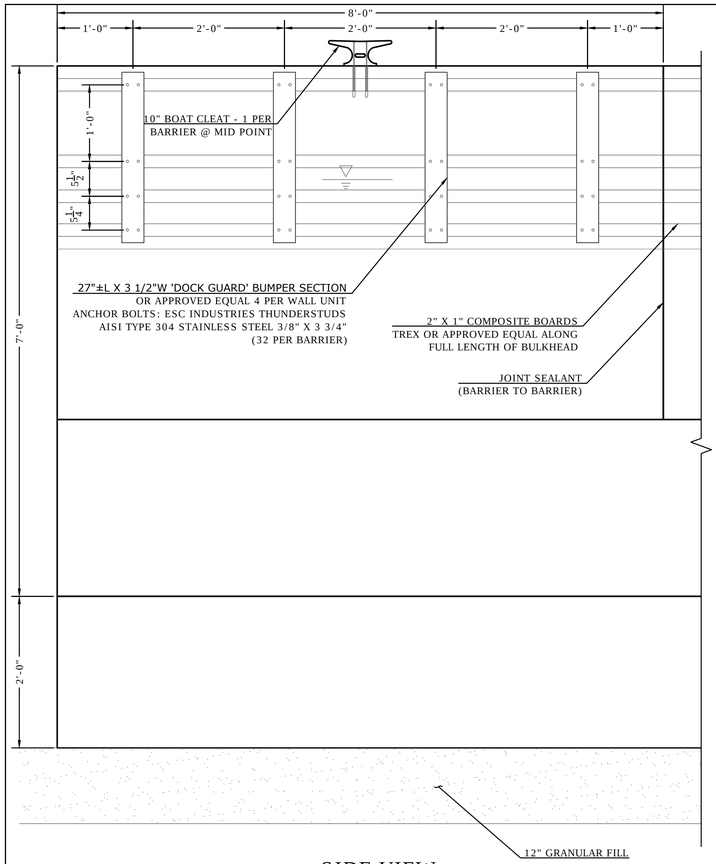
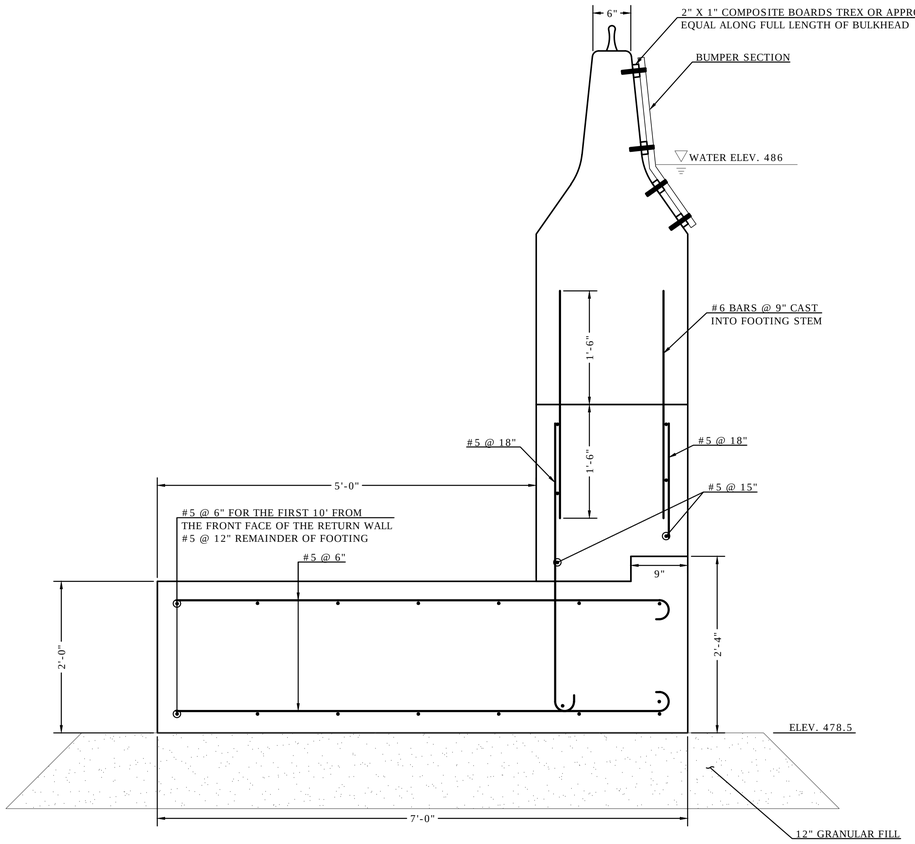
BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
BOAT LAUNCH DETAILS 3 OF 4
MITIGATION SITE

SIZE	PROJECT	FILE NAME	NUMBER	REV.	
D	BASHAN LAKE DAM	FD	12012.1		SHEET 23 OF 24



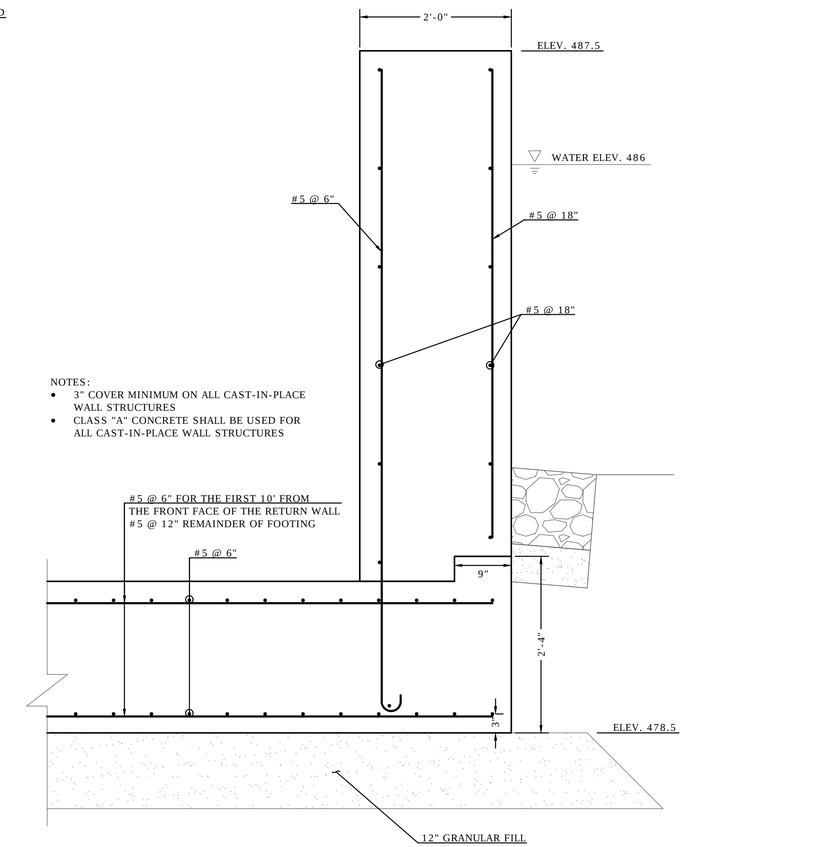
SIDE VIEW



SECTION VIEW

BULKHEAD WALL UNIT

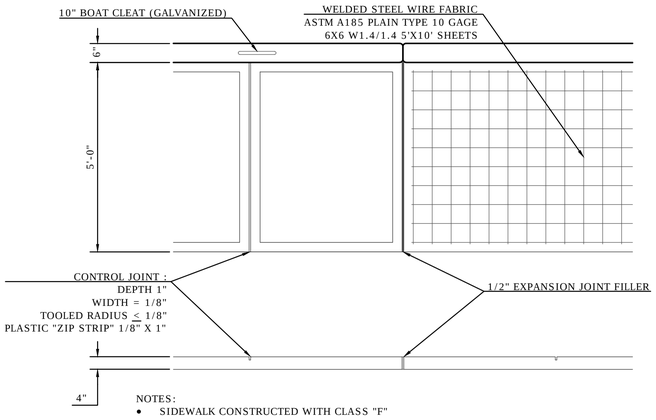
SCALE: 1" = 1'-0"



NOTES:
- 3" COVER MINIMUM ON ALL CAST-IN-PLACE WALL STRUCTURES
- CLASS "A" CONCRETE SHALL BE USED FOR ALL CAST-IN-PLACE WALL STRUCTURES

TYPICAL RETURN WALL SECTION

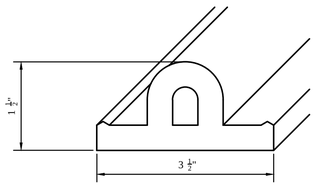
SCALE: 1" = 1'-0"



NOTES:
- SIDEWALK CONSTRUCTED WITH CLASS "F" CONCRETE f'c 5000
- SURFACE TO BE BROOM FINISH

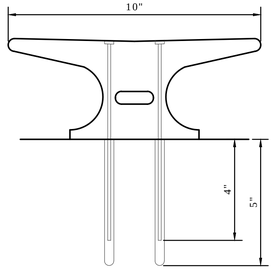
BULKHEAD WALKWAY/SIDEWALK (TYP.)

SCALE: 1" = 2'-0"



TYPICAL BUMPER SECTION

(SEE SPECIFICATIONS)
NOT TO SCALE

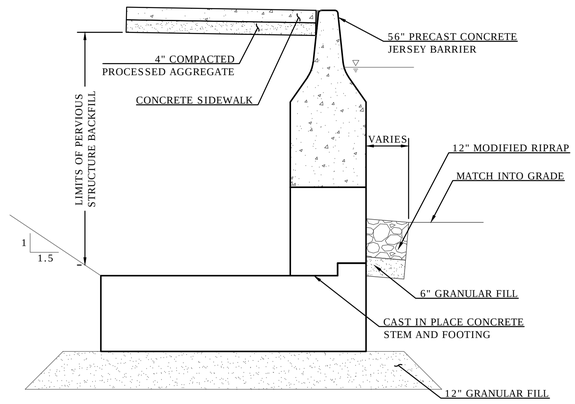


NOTES:
- LOCATE AND DRILL (2) 2"Ø HOLES 5" DEEP
- USE (2) 3/8"Ø GALV. BOLTS TO FASTEN CLEAT TO BARRIER
- POSITION CLEAT AND ANCHOR BOLTS WITH FIVE STAR INSTANT GROUT
- BOAT CLEAT TO BE HOT DIPPED GALVANIZED (ASTM A123)

CLEAT TO BARRIER INSTALLATION

NOT TO SCALE

NOTES:
WITHOUT ANY FOUNDATIONS SOIL INFORMATION, THE ALLOWABLE BEARING CAPACITY OF THE FOUNDATION SOIL COULD NOT BE DETERMINED.



TYPICAL BULKHEAD SECTION

SCALE: 1" = 2'-0"

THE INFORMATION, INCLUDING ESTIMATED QUANTITIES OF WORK SHOWN ON THESE SHEETS IS BASED ON LIMITED INVESTIGATIONS BY DEEP AND IS IN NO WAY WARRANTED TO INDICATE THE TRUE CONDITIONS OR ACTUAL QUANTITIES OR DISTRIBUTION OF QUANTITIES OF WORK WHICH WILL BE REQUIRED.

NO.	DATE	DESCRIPTION

REVISIONS

SUPV.	J.A.C.
DESIGN	K.K.
DRAWN	M.D.C.
CHECKED	K.O.E.
DATE	03/26/14

FINAL DESIGN

STATE OF CONNECTICUT — JAMES A. COSTELLO — 15205 — LICENSED ENVIRONMENTAL ENGINEER

WMC CONSULTING ENGINEERS

• WENGELL, McDONNELL & COSTELLO •
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PREPARED FOR:
STATE OF CONNECTICUT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

INLAND WATER RESOURCES DIVISION
79 ELM STREET
HARTFORD, CONNECTICUT 06106

BASHAN LAKE DAM IMPROVEMENTS
EAST HADDAM, CONNECTICUT
BOAT LAUNCH DETAILS 4 OF 4
MITIGATION SITE

SIZE	PROJECT	FILE NAME	NUMBER	REV.	SHEET	
D	BASHAN LAKE DAM	FD	12012.1		OF	24